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CHAPTER I.

LIFE OF ARISTOTLE.

STAGIRA—which, Boeckh says, should be written Sta-geiros—was a town in Northern Greece, on the western coast of the Strymonic Gulf (now called the Gulf of Contezza), just where the coast begins to take a southerly bend. Its situation has been compared with the southern part of the Bay of Naples. Immediately south, a promontory like the Punta della Campanella, and nearly in the same latitude, runs out in an easterly direction, thus effectually screening the little town and its harbour, Capros, from the stormy squalls of the Ægean. Stagira is said to resemble Sorrento, not only in the general disposition of its coast lines, but also in the terraced windings of its multitudinous orange and lemon groves.*

In this picturesque seaport, Aristotle was born, B.C. 384, that is, exactly one century after the birth of Herodotus;

* BLAKESLEY, *Life of Aristotle*, p. 12.

one century before the foundation of the Alexandrian library, and the execution of the Septuagint version of the Scriptures; and two centuries before the death of Philopœmen, 'the last of the Greeks,' when the Achæan league dissolved before the Roman power, and Greece merged her splendid existence in the dependence of a Roman province.

His father, Nicomachus, was a physician and an Asclepiad; but whether he had any better claim to the honour of descent from Æsculapius than so many others who usurped the title,* or simply belonged to the famous guild, cannot now be determined. It is certain that he was a physician of repute, attached to Amyntas II., the father of the Macedonian Philip.

It is unknown how long he remained at Stagira, before accompanying his father to the court of Amyntas, at Pella, where he learned to know and ingratiate himself with Philip, who was hereafter to befriend him. Everything at this epoch is conjecture, and conjecture may amuse, but cannot instruct.

At the age of seventeen he lost his father. This is the next isolated fact which has been recorded, and it is important. He thus became his own master, with the command of a large fortune; a perilous condition to most youths; the temptation to squander his fortune in frivolous dissipation must have been great, and could only be withstood by an unusual seriousness of mind, or unusual felicity in his social connections. So plausible is the supposition that a youth thus circumstanced will be ruined, that idle gossip, which always flits about a celebrated name, invented a story of his having wasted his means, and having been reduced to sell drugs for a subsistence; a story which, however, found refutation even among the ancients, and is wholly irreconcilable with the known facts of his subsequent career.

He was young, ardent, ambitious, rich. Athens, the glory

* See HARLESS: *De Medicis Vetricibus 'Asclepiades' dictis*, a work only known to me at second hand.

of the world, though her political sun was setting, the luminous centre of Philosophy and Art, beckoned to him, as Rome and Florence beckon to the students of our day. Plato taught there, and might admit him to the groves of the Academy. To listen to this 'old man eloquent' was a rare attraction, and naturally it drew him to Athens. Arrived there, he found that Plato was absent. Awaiting the great teacher's return, he qualified himself for discipleship by three years of arduous study. Had he squandered his wealth in dissipation, as the babblers reported, he could not have collected the treasure of books which he is known to have bought; for in those days it was almost as costly to create a library of books as in our own to create a gallery of pictures.* To collect books and to read them are not always the same thing. With him they were one; and Plato, alluding to the extraordinary passion he displayed, called him 'the reader.' His writings show how diligently he had studied all accessible literature; and it is to his punctilious quotation of his predecessors that we are greatly indebted for the preservation of many fragments of ancient thought. So little justice is there in Bacon's sarcasm, that like an Eastern despot he strangled his rivals in order to reign peaceably.†

* According to GELLIVS, he paid for the works of SPEUSIPPUS alone three Attic talents, that is about 700*l.* of our money, a sum not to be spared out of the profits of drug-selling unless by a merchant-prince. In our own days 1,000*l.* has been paid for a rare edition of an Italian poet; but *that* was merely the avidity of a collector's furor backed by the wealth of an English nobleman. Curious details on the price of books in the Middle Ages may be read in MURATORI: *Dissertationi sopra le antichità Italiane*, Diss. XLIII. Compare also HEEREN: *Geschichte der classischen Litteratur im Mittelalter*. Werke, 1822, IV. In our days of cheap literature—cheap, because we have cheap paper, and that because we wear linen instead of woollen clothes—these details seem to render the darkness of the dark ages more intelligible.

† Aristotle's precepts, no less than his practice, answer this accusation. See *Metaph.* II. 1, 995; *De Celo*, I. 10, 279; and *De Anima*, I. 1. BACON simply echoed PATRIZIO, whose enmity was virulent and avowed, and who declares that one cause of this hatred was the abuse which Aristotle heaps on the writers from whom his best ideas are stolen. PATRITII *Discussionum Peripateticarum t mi quatuor*, Bâle, 1581, from which learned but untrustworthy work some moderns have largely drawn. The first volume contains a life and a list of the extant

When Aristotle came to Athens the splendour of her life was fast departing, and near at hand was the towering greatness of Macedon, so soon to overshadow her on the plains of Chæroneia. The sun was setting on the Age of Pericles, and was rising on the Age of Alexander. For sixty years Pericles had ceased to thunder from the bema; had ceased to communicate his agitating stimulus to art and politics; had ceased to adorn the beautiful city with his munificence and taste. Sophocles and Euripides were gone; and the grand and pathetic drama they had unfolded to applauding thousands, had fallen into the hands of Chæremon, Cleophon, and Theodectes (the last the friend of Aristotle), whose efforts to make rhetoric supply the place of poetry pointed unmistakably towards decline. Aristophanes no longer laughed at the absurdities, and scourged the corruptions of his time, in riotous and reckless farces, which too often wilfully misrepresented persons and ideas essentially wise and noble. No great prose writer except Xenophon remained; not one poet of eminence.

But if a sunset, it was still a glorious sunset, with some

works, with an account of all the Peripatetics. In the third book there is a valuable collection of the passages in which *A.* refers to his own writings; a collection subsequently used and expanded by RITTER, but without the acknowledgment due in such a case. The second volume gives an exposition of the points of *agreement* between the doctrines of *A.* and Plato, and the older writers. In the third volume the points of *difference* are noted. In the preface he complains of the insults to philosophers (p. 291-2), and sarcastically adds that there is no mention of HIPPOCRATES. (Some moderns, coupling this supposed silence with the silence of THUCYDIDES, have argued that Hippocrates lived after Aristotle; but the fact is that Hippocrates *is* mentioned, and in the *Politics* there is a sketch of his views on climate.) In the fourth volume PATRIZIO gives full expression to his antagonism. GIORDANO BRUNO, in spite of his own opposition to the peripatetic system, speaks with measureless contempt of PATRIZIO, as 'un sterco di pedante Italiano che ha imbrattati tanti quinterni con le sue discussioni peripatetiche,' and vows that he has not understood the Stagirite, but only read and re-read him, 'cucito, scucito e conferito con mill' altri greci autori amici e nemici di quello, et al fine fatta una grandissima fatica non solo senza profitto alcuno, ma etiam con un grandissimo spropósito.' *De la Causa Principio et Uno* (*Opere Ital.*, Leipzig, 1830), I. 250. PATRIZIO had many admirers and imitators; a notable one is BASSO, *Philos. Naturalis adversus Aristotelem libri xii.* Elzevir, 1649. I have not had the courage to extend my wanderings further through this rubbish of denunciation and criticism heaped up by the iconoclasts.

splendour of the after-glow. Great memories swelled ambitious minds. Powerful vibrations were still felt from Salamis, Marathon, and Plataea. Isocrates upheld the renown of Athenian eloquence; and the greater Demosthenes was preparing for his matchless displays. Praxiteles was at work upon statues, the very copies of which were for centuries to be the despair of artists. Scopas, the sculptor of the immortal Niobe and the Venus of Milo, had enchanted the Athenians with his Furies. Diogenes, with drastic energy, despised the citizens from his tub. The schools were crowded with listeners to many teachers. In every direction there was intellectual activity and social ferment. A young, keen intellect would find there abundant stimulus.

As years ripened his intelligence, and free intercourse with eminent men procured him the advantages and opportunity of display, Aristotle gradually won for himself a foremost position. He came there a raw ambitious youth, not only with the disadvantages of inexperience, but with those disadvantages of accent and manner which, in the eyes of supercilious Athenians—the Frenchmen of antiquity—made him seem almost a barbarian. These, however, he soon modified. One fact recorded of him—that he was somewhat given to foppery in costume—implies an eager sensitiveness to approbation, which would have directed his attention to anything provincial in his air. Keen, witty, logical, and learned, he was a brilliant talker, and in that city of talkers could hold his own with the best; not even refraining from controversy with his great master. Without pretending to decide the much-vexed question of his ingratitude towards Plato, I must express my own disbelief in the accusation; although it is very credible, and by no means derogatory to him, that, differing from his master in cast of mind, as well as on certain fundamental points of philosophy, he should often, during the seventeen years they were together, have been seduced into warm, and sometimes irritating, discussions with one whom, on the whole, he considered as the noblest of

thinkers. All opposition is apt to be construed as an offence ; and if Aristotle's criticisms and allusions to Plato are not always remarkable for their judicial calmness, they have never any approach to irreverence. Often in antagonism—how could this sincerely be avoided?—he is never in hostility to Plato. Indeed, in the *Ethics*, he complains of the necessity of attacking doctrines held by 'dear friends,' adding, 'It is our duty to slay our own flesh and blood where the cause of Truth is at stake, especially as we are philosophers ; loving both, it is our sacred duty to give the preference to Truth.' It is a timidity unworthy of a noble mind to shrink from intellectual opposition, as an offence against friendship, and to suppress convictions for fear of misconstruction.

Aristotle remained twenty years at Athens. During seventeen of these years, Plato was first his master, and then his friend. His health was, like that of most ardent brain-workers, delicate. He was short and slender in person ; he had small eyes, and an affected lisp. Somewhat given to sarcasm in conversation, he made, of course, many enemies. On hearing that some one had vituperated him in his absence, he humorously said, 'If he pleases, he may beat me too—in my absence.' His heart was kind, as was manifest in certain acts, and is expressed in this saying, 'He who has many friends has no friends,' which profoundly touches the very core of the subject, and may be paired off with this other saying of his, 'A friend is one soul in two bodies.' When asked how we should behave towards friends, he said, 'As we should wish them to behave towards us.'

Advancing age and development, no less than the decidedly scientific bias impressed upon his studies, necessarily caused him to take up an independent position with respect to Plato, who had little taste for physical science, and whose intellect naturally withdrew from those very subjects to which his young rival was, by nature and early bias, strongly determined. Without absolutely opening a rival school, Aristotle gradually gathered round him a circle of admirers,

and began, during the last years of his Athenian residence, to give lectures.*

Among the listeners was Hermias, the tyrant (or ruler) of Atarneus, and to him, by invitation, Aristotle went, on quitting Athens, after Plato's death. His companion on this journey was Xenocrates, the best loved of Plato's disciples. What was the object of their visit? It has been conjectured that Hermias invited them to frame a political constitution. The scheme, if such it were, was frustrated by the assassination of Hermias, and the fall of Atarneus into Persian hands. The two philosophers escaped to Mytilene, carrying with them Pythias, the adopted daughter of their friend and patron; and Aristotle subsequently married her, out of compassion for her defenceless position, and respect for the memory of his murdered friend. Worthy of special reprobation, as indicating the peculiar infelicity with which calumny often selects its points of attack, is the fact that his friendship for Hermias, and generosity toward Pythias, furnished the cruel thoughtlessness of scandal with its bitterest accusations. Here once more may be seen how in this life men are punished for their virtues; as a set-off, perhaps, to the rewards which often crown their vices. So little reliance can be placed on these ancient scandals, that some call Pythias the daughter, and others the concubine, of Hermias. It is, perhaps, a slight objection to both these assertions that Hermias was an eunuch.

To the memory of Hermias he raised a statue at Delphi, with an inscription; on which act was founded a charge of impiety. Nor was the memory of Pythias, who died after giving birth to a daughter, less honoured by the grateful husband. In his will he enjoined that her bones should be laid beside his own.

He had not long been at Mytilene before he received

* The story of his having practised medicine at this time, which is founded on his interest in that art, is refuted by his express statement in the work *De Divinatione*, I. 463, that in medicine he was only one of the laity, though accustomed to philosophise upon it.

from Philip of Macedon the magnificent offer to undertake the charge of the young Alexander. From this it is evident that his reputation, while at Athens, must have been considerable. To Macedon he went. His princely pupil was then fourteen: young enough to receive a determining bias, old enough to revere the intellectual force which impressed that bias. The respectful love which men of fine intellect and generous sympathies so gladly give to their first instructors is well expressed in the saying of Alexander, that he honoured Aristotle no less than his own father; for if to the one he owed life, to the other he owed that which made life valuable.

That the tutor and pupil might promenade in the cool shade during the hours of instruction, Philip caused a gymnasium to be built in a grove; and even so late as the days of Plutarch, the traveller might still see the shady walks (*περίπατοι*) with their stone seats for resting-places. Aristotle remained seven years in Macedon; but only four of these were given to the education of the prince, who at eighteen became Regent. Thus while Demosthenes was thundering against the ambition of Philip, who claimed for Macedon the hegemony of Greece, Aristotle was stimulating and enlarging the mind of Alexander, who was soon to carry the silver shields of Macedon from Syria to Egypt, from Candahar to the Indus, and from the Indus to the Persian Gulf. Popular fiction makes the great teacher accompany the great conqueror on this splendid expedition; and one regrets that this is a fiction. There was, indeed, other work for Aristotle to do, which the life of camps would hardly have advanced. Still the expedition would have been a vast experience for him; and his observing mind could not have beheld that varied, shifting panorama without great result. To have passed with the conquering hosts to Tyre; to have witnessed the foundation of Alexandria; to have lived through the agitations of the day at Arbela, when the countless hosts of Darius were assembled on the plain beneath the Koordish mountains, and there were slaughtered like sheep; to have

witnessed the successive subjection of Babylon and Susa, of Persepolis and Ecbatana; and finally to see the young Dionysus, maddened with the insolence of success, cut off suddenly in his youth; these were grand experiences which one regrets to think were lost to Aristotle.

Although, as I said, the relation between master and pupil lasted only four years, the relation of friendly counsel on the one side, and magnificent gratitude on the other, continued. Had it not been for Alexander's princely aid, Aristotle's enormous collections could not have been made. The aid is unexampled. It is said, but not on trustworthy authority, that Alexander presented him with the sum of eight hundred talents, which represents nearly two hundred thousand pounds of our money. Few critical readers will believe that; and Schneider, in his edition of the *Historia Animalium*, quotes with approbation the estimate of a predecessor, who calculates that the whole revenue of Macedon would not have furnished such a sum. Still if we make liberal deductions, and strike off two-thirds of this sum, it leaves a splendid surplus. The enormity of the exaggeration points to an enormous sum. Add to this the statement of Pliny, that Alexander gave orders to his hunters, game-keepers, fishermen, and bird-catchers to furnish the philosopher with all the material he might desire—an order which at once placed several thousand men at his service.* But at the same time remember it is Pliny who makes the statement, and for untrustworthiness of statement he cannot easily be surpassed; so that even here an immense exaggeration may be suspected; and to sum up, remember that although Aristotle must have had a large collection of materials before he could have written his work on animals, Humboldt declares

* 'Alexandro Magno rege inflammato cupidine animalium naturas noscendi, delegataque hac commentatione Aristoteli, summo in omni doctrina viro, aliquot millia hominum in totius Asiæ Græciæque tractu parere jussa, omnium quos venatus, aucupia, piscatusque alebant; quibusque vivaria, armenta, alvearia, piscinæ, aviaria in cura erant; ne quid usquam gentium ignoraretur ab eo.'—PLINY: *Hist. Nat.* viii. 17.

that there is no trace in that work of any acquaintance with animals first known through Alexander's expedition.

After an absence of twelve years, B.C. 335, Aristotle reappeared in Athens. He found the Academy already occupied by his friend Xenocrates; so that some other place had to be sought where he might open a school. This he found at the Lyceum, a gymnasium in the vicinity of the temple of Apollo Lykeios, founded by Pisistratus, and embellished by Pericles. It was the most splendid of the Athenian gymnasia, consisting of a mass of edifices surrounded with gardens, avenues, and a sacred grove. It had its spacious courts with porticoes, theatres for professors, covered promenades, baths, an arena for wrestling matches, and a stadium for foot-races. The walls were adorned with paintings; the gardens and walks were furnished with seats. But we must not suppose, as many suppose, that this establishment was placed under the direction of Aristotle, or that he had any voice in its affairs. He simply received permission to teach in the morning and evening at the *peripatos*,* a permission which was the more acceptable because the shady walks offered facilities to his accustomed habit of walking to and fro during the delivery of lectures. The name of Peripatetics is commonly supposed to have been given to his disciples on account of this habit; but as, according to the testimony of Theophrastus and Lycon, the lecture-place itself was named *ὁ περίπατος*, the locality probably gave the title to his school. This suggestion is countenanced by the practice in other cases; for we find the schools designated by the places where they were founded, unless when some peculiarity in doctrine gave the title: thus the Academy, the Porch, the Garden, Megara, and Cyrene, severally gave names to schools; but never was a name borrowed from some casual peculiarity in the mode of lecturing. Moreover, Aristotle was by no means singular in this practice of promenading while he taught.

* MATTER: *Hist. de l'École d'Alexandrie*, Paris, 1840, I. 30.

For thirteen years he continued teaching, and composing his immortal treatises; powerfully impressing the crowd of eager disciples, but probably regarded with angry suspicion by the patriots, owing to his connection with Alexander. And now came the electric shock, shaking Athens to her foundations, and agitating her with tumultuary hopes: the Great Conqueror was no more! At once, and with exultant energy, the anti-Macedonian party took the lead in public affairs. Aristotle necessarily was in peril; for although, in truth, his life had been blameless of political intrigue, and no colourable accusation could be raised against him on that score, if only because he was excluded from political influence; * yet as a foreigner, a philosopher, and a friend of Macedon, he was trebly odious to the political leaders; and a pretext for accusation was raised on a ground where such pretexts are always easily raised and are always dangerous—irreligion. He was accused of blasphemy, and of paying divine honours to mortals. And who were these mortals he had honoured? His friend and his wife. The charge may seem frivolous; but too well he knew the temper of the multitude to hope that the absurdity of the charge would be a guarantee for his safety. Mobs seldom reason, rarely examine. The blameless life and lofty soul of Socrates had been no defence against the charges of Meletus; and Aristotle quitted Athens, ‘not to give the Athenians a second opportunity of committing a sacrilege against philosophy.’

He retired to Chalcis in Eubœa. There he wrote an elaborate defence of his conduct, and exposed the calumnies circulated about him. But his health, always delicate, and severely tasked by unremitting study, rapidly gave way. The Athenians, on his refusal to appear in answer to the summons of the Areopagus, deprived him of citizenship, and all the honours that had been conferred upon him. An idle sentence of death was passed; but nature had

* This political attitude is conspicuously set forth in Mr. CONGREVE's introduction to his edition of the *Politics*, London, 1855.

already written that sentence in terms that were not idle. He died in the sixty-third year of his age, B.C. 322, only a few months before the great orator, Demosthenes, also an exile.

His will, which may be read in Diogenes Laertius, tells of his thoughtful kindness. His daughter Pythias, his son Nicomachus, his adopted son Nicanor, and his concubine Herpyllis, are all duly provided for, and some of his slaves are emancipated, others rewarded.

The purposes of this History render it unnecessary to enter upon the vexed question of the authenticity of the various writings which have passed under his name, had I the scholarship which could justify such a digression. The curious reader will easily find abundant material on this and all cognate points. We have here rather to consider the nature of his achievements. The first thing which must strike every one is their encyclopædic extent, unrivalled in the history of literature. In all branches of science then cultivated he was proficient. He wrote on Politics, giving the outlines of two hundred and fifty-five constitutions; even the little treatise on that subject, which is still extant, is thought to be one of the very best works yet written; and Dr. Arnold, who knew it by heart, declared that he found it of daily service in its application to our own time. His Ethics, Rhetoric, and Logic are still by many held to be authoritative and unsurpassed. His Metaphysics would of itself suffice to found a great renown. His fragment on Poetics is perhaps the most valuable of all ancient critical writings. And as if these were not titles enough, we must now add the several scientific works which form the special object of this volume; these embrace Physics, Astronomy, Zoology, Comparative Anatomy, and Psychology. With Sir W. Hamilton, we may say, 'His seal is upon all the sciences, and his speculations have mediately or immediately determined those of all subsequent thinkers.' Hegel, though of a less fervid temperament, expresses himself with greater emphasis: 'He penetrated into the whole universe of things,

and subjected its scattered wealth to intelligence; and to him the greater number of the philosophical sciences owe their origin and distinction.’*

Such an intellectual phenomenon must always excite astonishment. Let us form what opinion we may of his philosophy, we cannot withhold our admiration of the vigour and comprehensiveness of his mind. Nor is this his only claim. He is admirable for the intense urgency of his mind in seeking *scientific* explanations of phenomena, at a period when such explanations were novelties; and for the dominant inductive tendency which led him on all subjects to collect the facts before reasoning on them. The contrast he presents to Plato in this respect is as much to his advantage as the contrast in respect of literary power is to his disadvantage.†

* HEGEL: *Gesch. der Philos.*, 1833, II. 298.

† The contrast is felicitously presented by MAURICE in the following passage:—‘The student passing from the works of Plato to those of Aristotle is struck first of all with the entire absence of that dramatic form and that dramatic feeling with which he has become familiar. The living human beings with whom he has conversed have passed away. Prodicus, Protagoras, and Hippias are no longer lounging upon their couches amidst groups of admiring pupils; we have no walks along the walls of the city, no readings beside the Ilissus, no lively symposia giving occasion to high discourses about love, no Critias, recalling the stories he had heard in the days of his youth, before he became a tyrant, of ancient and glorious republics; above all, no Socrates forming a centre to those various groups. Some little sorrow for the loss of so many clear and beautiful pictures will be felt, perhaps, by every one, but by far the greater portion of readers will believe that they have ample compensation in the precision and philosophical dignity of the treatise for the richness and variety of the dialogue.’—*Moral and Metaphysical Philosophy*, 1850, I. 162.

CHAPTER II.

ARISTOTLE'S METHOD.

ALL philosophy is either an objective inquiry into the relations of Things, or a subjective inquiry into the relations of Ideas. We begin by forming conceptions of phenomena, and then we proceed to inquire how those conceptions were reached; in the second inquiry we have to lay bare the genesis of our knowledge, and, in so doing, to discriminate between its objective and subjective elements; between what is *given* by the external order, and what is *brought* by the mind. This separation has been attempted with more or less success in all ages of philosophy; but it was only in Kant that it was attempted with a clear consciousness of its speculative importance. We shall in the course of our survey have many opportunities of watching the attempt; and we must fix our attention on Aristotle as the first who arranged speculative questions in such a systematic form as stimulated and suggested the research. He not only resumed all the speculations of his predecessors, and placed them in a clearer light by his redistribution of their questions,—he not only condensed the vacillating vapours of philosophy into tangible systems: he constructed an *Organon* whereby all research might be carried on.

Plato had rightly discerned that science could only be of Universals (as we should say, general propositions): the great question which presented itself following this was, How do we arrive at these general propositions? What *are* these Universals? And the importance of this question is seen when we reflect that, widely as modern science differs from ancient science, both agree in founding their principles on

general propositions, the difference arising in the routes by which these propositions have been sought, and the guarantees they offer. In modern science universals are the highest generalities of accurate quantitative research. Often transcending the limits of actual experience, they are always founded on experience, and are strictly conformable with all we know, or think. As abstract expressions of the observed order they are liable at any moment to be displaced by expressions more accurately representing that order. They are recognised as purely subjective. In ancient science they were never suspected to have an objective reality. They were by most thinkers believed to exist quite independently of the knowing mind; and it was the primary aim of science to find them as existences; when found, they needed no confrontation with reality, they were self-disclosed and self-sustained.

It is here that the fundamental difference between ancient and modern philosophy begins, and it is only another form of the fundamental difference between the Subjective and Objective Methods. In Aristotle we are called upon to salute the dawn of the Objective Method, although many centuries had to elapse before that dawn could widen into day. From causes which I have elsewhere explained,* the continued employment of the Subjective Method was inevitable; nevertheless Aristotle may be truly styled the father of the Inductive Philosophy, since he first announced its leading principles; and announced them with a completeness and precision not surpassed by Bacon himself. There is, indeed, a radical defect in his conception of Method, but it is a defect not less visible in the *Novum Organum*, and is common to all the systematic expositions of Method that have yet been published. This defect is the absence of the due recognition of Verification. All writers implicitly recognise Verification as the inseparable attendant of Observation, Induction, and Deduction; but

* *Aristotle: A Chapter from the History of Science*, pp. 45-100.

they do not explicitly, and emphatically, assign to it the primary importance it should have; they do not trace in its neglect the cause of every failure. Overlooking this defect, men have expressed surprise at the unquestionable fact that Aristotle and Bacon failed egregiously in scientific research, in spite of their conception of scientific Method; and this failure has sometimes been made a ground for denying the value claimed for Method. But the seeming contradiction disappears on close examination. The failure is then traced to a radical imperfection in the Method. A discrepancy is disclosed between the principles which Aristotle and Bacon implicitly taught, and the principles they actually employed.

We will first inquire what those principles were. In direct opposition to Plato, who, denying the validity of the senses, made intuitions the ground of all true knowledge, Aristotle sought his basis in sensuous perception. Anticipating Bacon, he affirmed that it was wiser to dissect the complex phenomena of sense than to resolve them into abstractions—‘*melius est naturam secare quam abstrahere.*’* His reliance was on Experience and Induction: the one furnishing the particular facts, from which the other found a pathway to general facts—or laws.† Without sensation thought is impossible.‡ Plato held that the deceptions of sense justified scepticism of all sense-knowledge (ἀπατῆς μεστὴ ἡ διὰ τῶν ὁμμάτων σκέψις). Aristotle, more correctly, taught that error did not arise from the senses being false media, but from the wrong interpretations we put on their testimony. Manifold deceptions may thence arise; but each sense speaks truly so far as it speaks at all.§ It is from sense we gain the knowledge of particulars. It is from Induction we gain the knowledge of universals. Agreeing with Plato that Science

* BACON: *Nov. Org.*, 41.

† ἐπαγωγή δὴ ἡ ἀπὸ τῶν καθέκαστα ἐπὶ τὰ καθόλου ἐφοδος. *Topic*, I. 10. See also *Anal. Post.*, I. 31; *Hist. Animal.*, I. 6.

‡ οὐδὲ νοεῖ δ νοῦς τὰ ἐκτὸς μὴ μετ’ αἰσθήσεως ὄντα. *De Sensu*, VI. 445; *De Anima*, III. 8, 432.

§ *De Anima*, III. 3; *Metaph.*, IV. 5; and elsewhere.

is only concerned with universals, he affirmed that these could only be reached through experience.

This is the corner-stone of the experience-philosophy or 'Empiricism,' so often urged as a reproach against Aristotle.* Hegel boldly denies the charge. Science regards the accusation as an eulogy. Unhappily, even by Aristotle, experience was too frequently neglected and too carelessly interrogated. The vigilance of scientific scepticism was wanting. Yet at times he seems thoroughly impressed with the necessity of securing his basis before attempting to build. 'Let us first understand the facts, and then we may seek for their causes.'† There are many passages in which he distinctly disapproves of the fatal tendency to eke out deficiencies of observation by mere guesses, and to rely on those guesses as on observations. Of such passages four may here be given :—

I. Speaking of the parthenogenesis of bees, he says, 'There are not facts enough to warrant a conclusion, and more dependence must be placed on facts than on reasonings, which must agree with facts.'‡

II. Speaking of Hybridity, after noticing the opinions of his predecessors, and even suggesting an *à priori* argument himself, he says, 'But such a proof is far too abstract and empty (κενός). For reasons not drawn from the inherent principles of things (τῶν οὐκείων ἀρχῶν) are empty, and only seem to explain them, just as only those are geometrical proofs which are deduced from geometrical principles; so also in all other sciences. The empty argument seems potent, but is powerless.'§

III. Speaking of those who held a certain astronomical view, he says, they did so because their thoughts were not directed to the phenomena and the discovery of the causes, but they endeavoured to make the phenomena correspond with their opinions.|| And still more strongly in this

* Even so late as SCHLEIERMACHER, who urges it in his History of Philosophy.

† *De Part.*, I. 1, 639.

‡ *De Gener. Animal.*, III. 10, 760.

§ *Ibid.*, II. 8, 748.

|| *De Cælo*, II. 13, 293. Compare also *ibid.*, p. 294.

passage: 'These philosophers, treating of phenomena, say things which by no means correspond with the phenomena, the cause of this being that they have not rightly conceived first principles, but reduce everything to certain prescribed notions (*πρὸς τινὰς δόξας ὀρισμέναις*), and they persist in these in spite of all contradiction, as if they were in possession of true principles, as if these ought not rather to be educed from the phenomena.'*

IV. 'The reason why men do not sufficiently attend to the facts is their want of experience. Hence those accustomed to physical inquiries are more competent to lay down the principles which have an extensive application; whereas others who have been accustomed to many assumptions without the confrontation of reality, easily lay down principles, because they take few things into consideration. It is easy to distinguish those who argue from facts and those who argue from notions.'†

Instead of distrusting knowledge derived through the senses, and placing unhesitating reliance on knowledge derived from intuitions, he declared that ideas are nothing but the products of reason. Reason separates, by abstraction, the particular objects from their general relations, *i.e.* those relations which these objects have in common. Anticipating modern Psychology, he taught, confusedly indeed, and not always consistently, that intelligence is a late development; that the understanding is built up from sensuous materials; each particular sensation gives rise to a sensuous taste, and the permanence of this state is Memory; from Memory arise, first, *distinctions*; and finally, after many repetitions, *experience*; from experience a pathway leads to Science, that pathway being Induction. Plato taught that all knowledge was reminiscence—a revival of pre-existent Ideas. From any one Idea we can arrive at all others, owing to the logical connection existing between them. In direct contradiction to this, Aristotle maintained that complete knowledge could only

* *De Cælo*, III. 8, 306.

† *De Gen. et Corr.*, I. 2, 316. Compare also *De Partibus*, IV. 5, 679.

arise out of complete experience; and he significantly points out the danger of the Platonic Method, which neglects facts, and rashly concludes a general proposition from a few particulars.*

In indicating the way we are to arrive at general truths, he expresses himself with a precision unsurpassed by moderns. 'We must not,' he says, 'accept a general principle from logic only, but must prove its application to each fact, for it is in facts that we must seek general principles, and these must always accord with the facts.'† Nor, while thus insisting on Observation, was he wholly without a perception of the value of that aid to inquiry, which is usually supposed to be a modern invention, I mean Experiment. He did not, indeed, see its importance as moderns have seen it; for, not rightly apprehending the necessity of Verification, he failed to apprehend the true purpose of Experiment, which is simply a means of verifying the accuracy of data, and conclusions hypothetical or theoretical. But he refers to it, and even to vivisection, often enough to mislead a modern worshipper into the belief that this great instrument of scientific research was distinctly recognised by him. Here are a few of the passages I have noticed.‡

He refers to the experiment of tying or removing the right testis of the male, previous to congress, in disproof of the hypothesis that the sexes are derived from the right and left testes.§ He refers to the experiment of removing the eyes from young birds, to show that these organs are capable of being reproduced, a capability not observed in adult birds.|| Although he places the seat of motive power in the heart, yet he refers to the experiment of removing the heart from

* *De Gen et Corr.*, I. 2.

† *De Animal. Motione*, I. 698. Δεῖ δὲ τοῦτο μὴ μόνον τῷ λόγῳ καθόλου λαβεῖν, ἀλλὰ καὶ ἐπὶ τῶν καθέκαστα καὶ τῶν αἰσθητῶν, δι' ἃπερ καὶ τοὺς καθόλου ζητοῦμεν λόγους, καὶ ἐφ' ὧν ἐφαρμόττειν οἰόμεθα δεῖν αὐτούς.

‡ M. BARTHÉLEMY ST.-HILAIRE has pointed out several others in the introduction to his work *La Météorologie d'Aristote*, Paris, 1863.

§ *De Gener. Animal.*, IV. 1.

|| *Ibid.*, IV. 6.

tortoises, after which they still continue for some time to move;* and to prove that the nutritive soul is contained in the centre, he refers to the insects whose heads and limbs may be removed without destroying their vitality. The fact is incorrectly stated. The separated head will live almost as long as the body; and I have often found the hinder part of a triton live and move for hours after its separation from the body.†

Aristotle's opposition to the Ideal Theory was one of Method no less than of conclusion; and, in contrast with Plato, he seems like a positive thinker of the modern school. He does not deny to Ideas a *subjective* existence; but he is completely opposed to their *objective* existence, which he regards as an empty and poetical metaphor. He says, that on the supposition of Ideas being Existences and Models, there would be several Models for the same Thing; since the same thing may be classed under several heads. Thus, Socrates may be classed under the Ideas of Socrates, of Man, of Animal, and of Biped; or Philosopher, General, and Statesman. The 'stout Stagirite' not only perceived the logical error of the Ideal theory, but also saw how the error originated. He profoundly remarked, that Ideas are nothing but productions of the Reason, separating, by a logical abstraction, the particular objects from those relations, which are common to them all. He saw that Plato had mistaken a subjective distinction for an objective one; had mistaken a relation, which the understanding perceived between two objects, for the evidence of a separate existence. The partisans of the theory of Ideas, Aristotle likens to those who, having to enumerate the exact number of things, commence by increasing the number, as a way of simplifying the calculation. In this caustic illustration we may see the nature of his objection to the Platonic doctrine. What, indeed, was the Ideal theory, but a multiplication of the number of Exist-

* *De Resp.*, XVII. 479.

† STILLING narrates that a frog lived, hopped about, and defended itself, for an hour after removal of its heart, and the *whole* of its viscera. *Untersuchungen über die Functionen des Rückenmarks*, 1842, p. 38.

ences? Men had before imagined that things were great, and heavy, and black or brown; Plato separated the qualities of greatness, weight, and colour, and made these qualities new existences.

Having disproved the notion of Ideas being Existences,—in other words, of General Terms being anything more than the expressions of the Relations of individual things,—Aristotle was driven to maintain that the Individual Things alone *existed*. But, if only individuals exist, only by sensation can they be known; and, if we know them by sensation, how is the Universal, τὸ καθόλου, ever known—how do we get abstract ideas? This question was the more pertinent because science could only be a science of the Universal, or, as we moderns say, a science of general truths; now inasmuch as Aristotle agreed with Plato in maintaining that sense cannot furnish us with science,* which is always founded on general truths (Universals), it was needful for him to show how we could gain scientific knowledge.

Plato's solution of the problem has already been exhibited; it was the ingenious doctrine of the soul's *reminiscence* of a former apprehension of truth, awakened by those traces of Ideas which sensation discovered in Things. This solution did not satisfy Aristotle. He, too, was aware that reminiscence was indispensable; but by it he meant reminiscence of previous experience, not of an anterior state of existence in the world of Ideas. By sensation we perceive particular things; by *induction* we perceive the general in the particular. Sensation is the basis of all knowledge: but we have another faculty besides that of sensation; we have Memory. Having perceived many things, we remember our sensations, and by that remembrance we are enabled to discern wherein things resemble and wherein they differ; and this Memory then becomes an *art* whereby a general conception is formed: this art is Induction. The natural method of investigation, he says, is to collect all the facts or particulars, and afterwards deduce from these the general causes of all things and their

* *Analyt. Post.*, i. 31.

actions.* This is accomplished by Induction, the pathway from particulars to generals. Man alone has this art. The distinction between brutes and men is that the former, although they have Memory, have no Experience; that is to say, have not the art which converts Memory into Experience—the art of Induction. Man is the reasoning animal.

That Aristotle meant Induction by the art of which he speaks as furnished by experience, may be proved by one luminous passage of the *Metaphysics*. ‘Art commences when, from a great number of Experiences, one general conception is formed which will embrace all similar cases.’† And, lest there should be any misunderstanding of his definition, he proceeds to illustrate it. ‘Thus: if you know that a certain remedy has cured Callias of a certain disease, and that the same remedy has produced the same effect on Socrates, and on several other persons, that is *Experience*; but to know that a certain remedy will cure all persons attacked with that disease is *Art*: for Experience is the knowledge of individual things (τῶν καθέκαστα); Art is that of Universals (τῶν καθόλου).’

Hear him again: ‘Experience furnishes the principles of every science. Thus Astronomy is grounded on observation; for, if we were *properly to observe* the celestial phenomena, we might *demonstrate the laws* which regulate them. The same applies to other sciences. *If we omit nothing that observation can afford us respecting phenomena*, we could easily furnish the demonstration of all that admits of being demonstrated, and illustrate that which is not susceptible of demonstration.’‡ And, in another place, when abandoned in his investigation by phenomena, he will not hazard an assertion. ‘We must wait,’ he says, ‘for further phenomena, since phenomena are more to be trusted than the conclusion of reason.’

Looked at in a general way, the Aristotelian Method seems

* *Analyt. Post.*, i. 41; comp. also *Hist. Animal.*, i. 6.

† Γίνεται δὲ τέχνη όταν ἐκ πολλῶν τῆς ἐμπειρίας ἐννοημάτων καθόλου μία γένηται μερὶ τῶν ὁμοίων ὑπόληψις, *Μετ.*, i. 1.

‡ *Analyt. Prior.*, i. 30.

to be the Method of positive Science; but on closer meditation we shall detect their germinal difference to be the omission in Aristotle of the principle of rigorous Verification of each inductive step. The value of the truth expressed by a Syllogism does not consist solely in its accurate distribution, but also in the accuracy of its major premiss; we may form unexceptionable Syllogisms which shall be absurdly erroneous, as when we say, All black birds are crows; This bird is black: *ergo*, This bird is a crow. In the physical and metaphysical speculations of the ancients, we are constantly meeting with syllogisms as perfect as this—and as absurd; because the ancients generally threw their ingenuity into logical deduction, and scarcely ever into preliminary verification. When Aristotle therefore lays down as a canon the necessity of ascertaining generals from an examination of particulars, his canon, admirable indeed, needs to be accompanied by a distinct recognition of the equal necessity of Verification. Contrasted with the Platonic Method, Aristotle's is seen to great advantage. Plato, believing that the stimulus awakened by a single idea would enable a man to arrive at the knowledge of all ideas, in consequence of the necessary connection supposed to exist between them, could very well dispense with Induction. But Aristotle maintained that the completeness of knowledge is only obtainable through completeness of experience; every single idea is awakened in us by a separate sensation, and only on a comparison of like and unlike in phenomena are differences perceived. He complains of Plato, very justly, for neglecting details in haste to judge of universals.

Aristotle had therefore a novel and profound conception of scientific Method; but because he did not—and indeed in that age *could* not—confine himself to Experience and the generalisations of Experience, he could not effectually carry out his own scheme. His conception was just; but the application of such a Method could have led him only a short way, because there was not sufficient Experience then accumulated, from which to generalise with any effect.

Hence his speculations are not always carried on upon the Method which he himself laid down. Impatient at the insufficiency of facts, he jumps to a conclusion. Eager, as all men are, to solve the problems which present themselves, he solved them *à priori*. He applied his Syllogism before he had verified the exactitude of his premisses.

The distinction between Aristotle and Plato is, that while both admitted that science could only be formed from Universals, τὰ καθόλου, Aristotle contended that such Universals had purely a subjective existence, *i. e.* that they were nothing more than the *inductions* derived from particular facts. He, therefore, made Experience the basis of all Science, and Reason the Architect. Plato made Reason the basis. The tendency of the one was to direct man to the observation and interrogation of Nature; that of the other was to direct man to the contemplation of Ideas.

Observe, I say it was the tendency of the Aristotelian Method to direct man to the observation and interrogation of Nature; and this tendency we see illustrated in all the writings of the peripatetic school. But the tendency was in a great degree counteracted by the trammels of the Subjective Method, to which men still clung, and by a want of due appreciation of the indispensable necessity of Verification, whereby alone the Subjective Method could be displaced. We discern in Aristotle's conceptions of what constituted proof the germs of his logical failure.

Science is the co-ordination of facts, the reduction of particular facts to general facts. As this can only take place through an induction of universals from particulars, proof must first lie in the correctness of the induction; and when these universals have been attained, and a deduction is made from them to some new particulars, proof lies in the correctness of this deduction. There is, however, an initial difficulty: all knowledge rests upon antecedent knowledge. We see this in induction and in demonstration; the one arriving at a conclusion from particulars *already known*; the other starting from a conclusion *already known*. Plato

evades this difficulty by referring all knowledge to reminiscence. This explanation Aristotle rejects. He affirms that demonstration rests upon Universals which are *in their nature* better known * (or, let us say, more certainly apprehended); whereas Induction rests on particulars, which are better known *to us*. The basis of Science is therefore an Inductive Syllogism.

It is necessary to appreciate clearly this distinction between knowledge of universals and knowledge of particulars. He affirms that, although sensation is the origin of all knowledge, the first ideas awakened in the soul consist of *general* ideas. Thus a man seeing a body at a distance has at first only the general idea of *substance*; on approaching nearer, and observing that it moves spontaneously, he has the less general idea of an *animal*. On approaching still nearer, he recognises the kind of animal, by recognising many of the particulars which distinguish it as *kind*; and he thus gains a particular idea, in lieu of his first general idea. In this way the mind advances from the universal to the particular. The infant at first calls every man *papa*, and every woman *mamma*; afterwards it learns to discriminate individuals.

The fallacy here is patent. It confounds an *indefinite* with a *generalised* conception. It is a fallacy which leavens ancient speculation.

Since proof rests on universals, perception, which is concerned only with particulars, can give no science. Nay, if we could perceive that a triangle has the sum of its angles equal to two right angles, we should still be forced to seek for a proof of it (*ἐξητούμεν ἂν ἀπόδειξιν*), otherwise we should have no knowledge of it.

* This very important distinction in his philosophy was completely misunderstood by the schoolmen, who, as Mr. ELLIS pointed out, were misled by the ambiguity of the Greek dative, and for *notius naturâ*, which would have been the proper rendering of *τῇ φύσει γνωριμώτερον*, substituted *notius naturæ* as if Aristotle contrasted Nature's knowledge with our own. BACON fell into this error: *Works* by ELLIS and SPEDDING, 1857, I. 137. The same mistake is made by ROGER BACON: *Opus Majus*, Venet. 1750, p. 46.

If the question be asked *why* we must seek this proof of what has already been perceived, Aristotle answers: 'Because only particulars can be perceived, and science is of universals.' In another work (for hitherto I have been drawing from the *Analytics*), he judiciously remarks that it is absurd to seek for a proof of that which is clearly known, and for which all the conditions of a correct perception are present.* But even the universal must be obtained through induction from perceptions. He says that if we were in the moon, and the earth, coming between us and the sun, deprived us of light, we should have no knowledge of the cause of darkness; we should see that the moon was dark, but not why it was dark. It is true that, from frequent observation, we might find out the cause by detecting the universal; since *out of numerous particulars the universal becomes evident* (ἐκ γὰρ τῶν καθέκαστα πλείονων τὸ καθόλου δῆλον). But, he adds, the universal has the preference, because it makes evident the cause. We do not understand a phenomenon until we can demonstrate its cause by a syllogism, showing that it necessarily follows from some general principle. Hence syllogism is the true scientific instrument; and as the syllogism proceeds from the general to the particular, it must be better known in its nature than the particulars it has to prove.

* *Phys.* VIII. 3. Compare *Metaph.*, IV. 4.

CHAPTER III.

ARISTOTLE'S LOGIC.

THAT Aristotle was the first who instituted a separate Science named Logic, is a popular error. He has indeed the merit of having fully and systematically developed the various logical doctrines in a way unknown to his predecessors, and but little improved by successors for many generations; but he neither named these doctrines Logic, nor did he conceive them as parts of a separate science. That which since his day has been called the *Organon* is but a collection of independent essays on logical questions; and so far from its having any such purpose as the one commonly attributed to it, namely, the exposition of the Laws of Thought as Thought, the separation of Formal from Objective Logic, the unbiassed student will quickly discover that it has no systematic purpose, and the historian of philosophy knows that such a separation into Formal and Objective had not then been thought of.

It is unnecessary here to state in detail the contents of the separate treatises, which have been the text-book of logicians for centuries, and which therefore have supplied a want and exercised a fascination such as few works can rival. I shall content myself with a brief indication of their main results.

Logic is the science of Affirmation; Affirmation is the active operation of the Mind on that which sensation has presented to it: in other words, Affirmation is Thought. Affirmations may be true or false: there can be no falsehood in Sensation. If you have a sensation of an object, it must

be a true sensation ; but you may affirm something false of it. Every single thought is true ; but, when you connect two thoughts together, that is, when you affirm something of another thing, you may affirm that which is false. Everything therefore that you think about may be reduced to a Proposition ; in fact, thoughts are a series of Propositions. To understand the whole nature of Propositions—to understand the whole Art of Thinking—is the province of Logic.

By a very natural confusion, Aristotle, thus convinced of the importance of language, was led to maintain that truth or falsehood did not depend upon things, but upon words, or rather upon combinations of words—upon Propositions. Logic therefore to him, as to Plato, though in a different way, became the real Organon of Science. But, as John Mill remarks, ‘the distinction between real and nominal definitions, between definitions of words and what are called definitions of things, though conformable to the ideas of most Aristotelian logicians, cannot, as it appears to us, be maintained. We apprehend that no definition is ever intended to explain and unfold the nature of the thing. It is some confirmation of our opinion that none of those writers who have thought that there were definitions of things have ever succeeded in discovering any criterion by which the definition of a thing can be distinguished from any other proposition relating to that thing. The definition they say unfolds the nature of the thing : but no definition can unfold its whole nature ; and every proposition in which any quality whatever is predicated of the thing unfolds some part of its nature. The true state of the case we take to be this : All definitions are of names and of names only : but, in some definitions, it is clearly apparent that nothing is intended except to explain the meaning of the word ; while, in others, besides explaining the meaning of the word, it is intended to be implied that there exists a thing corresponding to the word. Whether this be or be not implied in any given case, cannot be collected from the mere form of expression. “A centaur is an animal with the upper parts of a man and the

lower parts of a horse," and "a triangle is a rectilineal figure with three sides," are, in form, expressions precisely similar; although, in the former, it is not implied that any *thing* conformable to the term really exists, while in the latter it is; as may be seen by substituting, in both definitions, the word means for *is*. In the first expression, "a centaur *means* an animal," &c., the sense would remain unchanged: in the second, "a triangle *means*," &c., the meaning would be altered, since it would be obviously impossible to deduce any of the truths of geometry from a proposition expressive only of the manner in which we intend to employ a particular sign.

'There are, therefore, expressions commonly passing for definitions which include in themselves more than the mere explanation of the meaning of a term. But it is not correct to call an expression of this sort a peculiar kind of definition. Its difference from the other kind consists in this, that it is not a definition, but a definition and something more. The definition given above of a triangle, obviously comprises not one, but two propositions, perfectly distinguishable. The one is, "There may exist a figure bounded by three straight lines;" the other, "and this figure may be termed a triangle." The former of these propositions is not a definition at all; the latter is a mere nominal definition or explanation of the use and application of a term. The first is susceptible of truth or falsehood, and may therefore be made the foundation of a train of reasoning. The latter can be neither true nor false; the only character it is susceptible of is that of conformity or disconformity to the ordinary usage of language.

'There is a real distinction, then, between definitions of names and what are erroneously called definitions of things; but it is that the latter, along with the meaning of a name, covertly asserts a matter of fact. This covert assertion is not a definition, but a postulate. The definition is a mere identical proposition, which gives information only about the use of language, and from which no conclusions respecting matters of fact can possibly be drawn. The accompanying

postulate, on the other hand, affirms a fact which may lead to consequences of every degree of importance. It affirms the real existence of things possessing the combination of attributes set forth in the definition; and this, if true, may be foundation sufficient to build a whole fabric of scientific truth.*

This distinction was not seen by Aristotle, and his whole philosophy was vitiated by the oversight. He regarded Definition not only as the Instrument of Thought, but as the Instrument of Investigation.

Philosophy having to classify Knowledge first attempts to classify existences, or the widest general relations under which existences can be known. These are the Categories. The history of the doctrine of Categories has been exhaustively treated by Trendelenburg,† and to his work the student is referred. The arrangement of Aristotle is as follows:—

Οὐσία	Substance.
Πόσον	Quantity.
Ποῖον	Quality.
Πρὸς τί	Relation.
Ποιεῖν	Action.
Πάσχειν	Passion.
Ποῦ	The where.
Πότε	The when.
Κεῖσθαι	Position in space.
Ἐχειν	Possession.

These Categories, or, as the Latin writers say, Predicaments, were intended to be an enumeration of those classes or *genera*, under some of which everything was to be reduced. They were held to be the most universal expressions for the various relations of things; they could not further be analysed, but remained the fundamental definitions of things. It is, however, as has been remarked,‡ a mere catalogue of the distinctions rudely marked out by the language of familiar life, with little or no attempt to penetrate, by philosophic analysis, to the *rationale* even of those common distinctions.

* MILL: *System of Logic*, i. 195-7.

† TRENDLENBURG: *Geschichte der Kategorienlehre*, 1846; comp. HAMILTON: *Lectures on Logic*, i.; BUHLER: *Gesch. der neueren Philos.*, i. 282-7.

‡ MILL: *System of Logic*, i. 60.

Such an analysis, however superficially conducted, would have shown the enumeration to be both redundant and defective. Some objects are omitted, and others repeated several times under different heads. It is like a division of animals into men, quadrupeds, horses, asses, and ponies.

The remark is just, and would have been admitted as just by Aristotle himself, since he does not pretend that the classification is complete, but confesses that the same object may, under different categories, be at once a quality and a relation. But Aristotle does not usually ascribe much importance to this enumeration of the most general notions; so that we may regard it as nothing more than an attempt to exhibit in a clear light the signification of words taken absolutely, in order to show how truth and falsehood consist in the right or wrong combination of these elements.

However imperfect this attempt at classification may be, it was held to be a satisfactory attempt for many centuries; nor was any one bold enough to venture on another until Kant, who, as we shall see, had quite a different object. We have not here to criticise it, but to exhibit its historical position. The idea of examining the *forms* of thought could scarcely have originated earlier. Previous speculators had occupied themselves with inquiries into the origin and nature of knowledge: Aristotle saw that it was time to inquire into the necessary forms of thought. To do this, to analyse the various processes of the mind in all its details, is the object of the treatises united together in his *Logic*.

Some had declared sense-knowledge to be deceitful; others had declared that sense-knowledge was perfectly faithful, as far as it went, but that it was incapable of penetrating beneath phenomena. Scepticism was assuming a menacing attitude. Aristotle, in his way, endeavoured to meet it, and he met it thus: It is true that the knowledge derived from our senses is not always correct; true also that our senses are to be trusted, as far as they go. A sensation, as a sensation, is true; but any affirmation you may make about that sensation may be either true or false, according to the affir-

mation. If an oar dipped in the water appears to you to be broken, the sensation you have is accurate enough; you *have* that sensation. But if, on the strength of that sensation, you affirm that the oar is broken, your affirmation is false. Error lies not in false sensation, but in false affirmation.

Like Plato, he held it to be indispensable to understand words if we are to understand thoughts; a position which, as we saw in the teaching of Socrates, was both novel and at the time important, because it called attention to the extreme laxity of language under which men disguised the laxity of their reasoning. A word, he said, is in itself indifferent; it is neither true nor false: truth or falsehood must result from a combination of words into a proposition. No thought can be erroneous; error is only possible to propositions.

Hence the necessity of Logic, which is the science of affirmations; it is in the Enunciate Proposition, ἀποφαντικός λόγος, that we must seek truth or falsehood. This proposition is subdivided into Affirmative and Negative propositions, which are mutually opposed, and give rise to Contradiction so soon as they are asserted in the same sense of one and the same thing: *e. g.* 'It is impossible for the same thing to be and not to be.'

The principle of Contradiction he declares to be the deepest of all; for on it all Demonstration is founded. Because, however, he confounded truth of Language with truth of Thought, and supposed that Thought was always the correlate of fact, he fell into the mistake of maintaining truth of Language, or Propositions, to be identical with truth of Being.

Having erected Propositions, or the affirmative and negative combinations of Language, into such an exalted position, it became necessary to attend more closely to names, and thus we get the Predicables, a fivefold division of general Names, not grounded, as usual, upon a difference in their meaning, that is, in the attribute which they *connote*, but upon a difference in the kind of class which they *denote*.

We may predicate of a thing five different varieties of class-name :—

Γένος	a Genus.
Εἶδος	a Species.
Διαφορά	a Difference.
Ἰδιον	a Property
Συμβεβηκός	an Accident.

‘It is to be remarked of these distinctions that they express not what the predicate is in its own meaning, but what relation it bears to the subject on which it happens on the particular occasion to be predicated. There are not some names which are exclusively general and others which are exclusively species or differentia; but the same name is referred to one or another Predicable, according to the subject of which it is predicated on the particular occasion. *Animal*, for instance, is a genus with respect to Man or Jolin; a species with respect to substance or Being. The words genus, species, &c. are therefore relative terms; they are names applied to certain predicates, to express the relation between them and some given subject: a relation grounded, not upon what the predicate *connotes*, but upon the class which it *denotes*, and upon the place which in some given classification that class occupies relatively to the particular subject.’*

Induction and Syllogism are the two great instruments of his Logic. All knowledge must rest upon some antecedent conviction; and both in Induction and Syllogism we see how this takes place. Induction sets out, from particulars already known, to arrive at a conclusion; Syllogism sets out, from some general principle, to arrive at particulars.† There is this remarkable distinction, however (already noticed), established by him between the two, namely, that the general principle of the syllogism is *better known in itself* and in its own nature, while the particulars from which Induction proceeds are better known to us.‡ How came he by this

* MILL: *System of Logic*, i. 162.

† *Analyt. Post.* i. 1

‡ Φύσει μὲν οὖν πρότερος καὶ γνωριμώτερος ὁ διὰ τοῦ μέσου συλλογισμός, ἡμῶν δ' ἐναργέστερος ὁ διὰ τῆς ἐπαγωγῆς.—*Analyt. Prior.* ii. 24.

distinction? Thus: the particulars of Induction are derived from Sense, and are more liable on that account to error; whereas the general principle of the Syllogism is known in itself, is further removed from the fallacies of sense, and is *κατὰ τὸν λόγον γνωριμώτερον*. Do we not always doubt whether we have rightly understood anything until we have demonstrated that it follows by necessity from some general principle? And does not this lead to the conviction that the Syllogism is the proper form of all science? Moreover, as the Syllogism proceeds from the general, the general must be better known than the particular, since the particular is proved by it.

Sensations are less trustworthy than ideas. The particulars are sensibles, but in and for themselves they are nothing; they exist only in relation to us. Nevertheless we are forced to make them our point of departure. We begin with sensuous knowledge to reach ideal knowledge. In this manner we proceed from the world of experience to that higher world of cognition.

The various investigations into the nature of Propositions which Aristotle prosecuted, were necessary to form the basis of his theory of reasoning, *i.e.* the Syllogism. He defined the Syllogism to be an enunciation in which certain Propositions being laid down, a necessary conclusion is drawn, distinct from the Propositions and without employing any idea not contained in the Propositions. Thus:—

All bad men are miserable;

Every tyrant is a bad man:

ergo,

All tyrants are miserable.

His examination of the sixteen forms of the Syllogism exhibits great ingenuity, and, as a dialectical exercise, was doubtless sufficient; but it must not detain us here. The theory of the Syllogism is succeeded by the theory of Demonstration. If all knowledge owes its existence to anterior knowledge, what is this anterior knowledge? It is the *major* proposition of a Syllogism. The conclusion is but the appli-

cation of the general to the particular. Thus, if we know that Tyrants are miserable, we know it because we know that All bad men are miserable; and the middle term tells us that Tyrants are bad men. To know, is to be aware of the cause; to demonstrate, is to give the Syllogism which expresses the knowledge we have. It is therefore necessary that every scientific Syllogism should repose upon principles that are true, primitive, more evident in themselves than the conclusion, and *anterior* to the conclusion. These undemonstrable principles are Axioms, Hypotheses, &c., according as they are self-evident, or as they presuppose some affirmation or negation; they are Definitions when they limit themselves to an explanation of the essence of the thing defined, without affirming anything respecting its existence.

The proper subjects of demonstration are those universal attributes of particular things which make them what they are, and which may be predicated of them. It is one thing to know *that* a thing is so; another thing to know *why* it is so: hence the two orders of demonstrations, the *τοῦ ὅτι*, 'the demonstration of the cause from a consideration of the effect,' and the *τοῦ διότι*, 'the demonstration of the effect from the presence of the cause.'

We close this exposition of the leading points of Aristotle's Logic with his own somewhat touching words, as he concludes his work: 'We have had no works of predecessors to assist us in this attempt to construct a science of Reasoning; our own labours have done it all. If, therefore, the work appears to you not too inferior to the works on other sciences which have been formed with the assistance of successive labourers in the same department, you will show some indulgence for the imperfections of our work, and some gratitude for the discoveries it contains.'

CHAPTER IV.

THE METAPHYSICS.

SCHOLARS and critics have attempted in vain to reduce the chaos of topics embraced in the treatises stitched together (not otherwise united) and known under the general title of Metaphysics. But although the ingenious effort of the Hegelian Michelet* was considered by the French Academy worthy of being crowned; and although I admit that he has so manipulated the books as to arrange them into something like systematic sequence; yet I would refer every unbiassed reader to the original itself, and ask him if any one of the books, considered separately, has the coherence and systematic development of topics which would be looked for in a modern work? The fact is we seek for such systematic composition only because we regard, and justly, Aristotle as a mighty precursor; and Philosophy having since become systematic, very much owing to his influence, we are led to infer that he also must have felt the necessities which are now universally felt. They were not felt then. He was the first who made any attempt to reduce knowledge to a system, to make the various branches of inquiry spring from one root. And the first attempt at so enormous a scheme may be excused if it were defective; while the individual portions of the scheme were necessarily in too immature a condition for anything like a connected exposition. We might as well open the 'Natural History of Animals,' and expect to find there something of our systematic Zoology. Indeed, the

* KARL MICHELET: *Examen critique de l'ouvrage d'Aristote intitulé Métaphysique, ouvrage couronné par l'Académie*, Paris, 1836.

presupposition, absurd as it really is, has been generally entertained; and moderns have not only expected to find a classification and philosophic principles in Aristotle's work, but have deluded themselves with the idea that they had found them.* When ancient works are approached in this spirit we need not wonder if they offer little difficulty to an inventive ingenuity. The very want of order which strikes the unbiassed mind, is seized on as a deliberate touch of higher art; and thus Michelet applies the verse

Souvent un beau désordre est un effet de l'art;

without any suspicion, apparently, that the disorder must justify itself by its beauty before it can claim to be art, and that disorder, simply as such, is not strength, but weakness.

It is incompatible with the limits and purpose of this History to expound at any length the various opinions which are jumbled together in the *Metaphysics* and the *Physics*. Various attempts have been made to reduce them to order,† and throughout the twenty centuries which have elapsed since they were promulgated, philosophers have quarrelled as to the correct interpretations which these opinions should receive. It is not thus with the systems of Descartes, Spinoza, Locke, Berkeley, or Hume.

I shall only touch on some of the more important positions. Aristotle so clearly saw and so felicitously explained the necessity of pursuing the true Method, passing from the known to the unknown, instead of beginning with the unknown (and unknowable) to descend to the known, that thinkers of the positive order have in all times found telling passages to quote from him, and thinkers of the metaphysical order have been prone to despise him as an empiricist. He did, indeed, emphatically proclaim the vanity of the *à priori* method. He insisted on the basis of experience; and he always begins an inquiry by enumerating (what is often

* See this point argued at length in my *Aristotle*, chap. xv.

† BIESE: *Die Philosophie des Aristoteles*, 1842; BRANDIS: *Aristoteles und seine Nachfolger*, 1853-57; and the histories of philosophy by HEGEL, BUHLE, TENNEMANN, RITTER, ZELLER.

quite superfluous) the opinions commonly received, and the decisions of philosophers, nay, even descending to minute examinations of the various meanings affixed to terms. This eminently unscientific procedure is still largely adopted by men of science, who, indeed, find it easier to expound what men have said about a fact, than what Nature says about it. This is to mistake the history of a science for the exposition of a science. What is it to us, who desire to know the fact itself, that the profound A, or the illustrious B, thought this or that about it? Had they rational data for their thought? If so, let us have the data, and leave the men to history. Aristotle collects the vagrant opinions of common men, and the more or less ingenious guesses of philosophers, hoping to elicit from these the *notiones communes* of speculation. But while thus invoking experience, he is led astray by the assumption that First Principles and Causes (*τὰ πρῶτα καὶ αἴτια* which form the subject of Philosophy) can be accessible through experience. In one sense this is true, and it is the truth which doubtless has misled so many minds. We do arrive through experience at generalisations which transcend experience, at laws wider than any particular instances accessible to us; but even in their widest sweep, these are only expressions of phenomena, and are purely relative; they disclose no absolute causes. Moreover, we have always to be on the alert to see that these generalisations express no more than experience warrants, and are not fictions of our imagination. Our tendency is to substitute the formal for the material elements of conception, to carry the subjective into the objective. And this tendency was so misleading to Aristotle that he considered noumena and cause to be better known than phenomena.

He seems so cautious and judicious when indicating the first steps, that we are surprised to find him suddenly on the other side, with no bridge visible over which he could have passed. In his definition of science we see a recognition of that generality which is deduced from experience, though never given in experience; as when he says that we know

by experience that Socrates was cured by the same remedy that cured Callias and many others, but we know by science that all men attacked by the same disease can be cured by the same remedy. It is in necessity and universality that we recognise science; and these cannot be given in experience. So far all is clear. But when he goes on to explain that science is of a deeper and wider knowledge than experience, because it teaches us the causes and reasons of things, and we only know anything correctly when we know not simply what it is, but why it is, he quits the ground of experience and abruptly takes up his position on that of the unknowable. He nowhere proves, or attempts to prove, that we can know the how and the why; he assumes it. He shows that experience of a thousand instances may lead us to the conviction that a certain remedy will cure a certain malady; but he nowhere shows that this conviction still remains nothing but a generalisation of experience, and cannot lead us to a deeper knowledge than that the fact *is* so; *why* it is so we must learn from another source, if it can be learned.

He is at one with Science in affirming that principles form the objects of inquiry; that he who possesses these knows all that is subordinate to them, or may know it; whereas he who knows particulars by no means necessarily knows principles; finally, that principles, being farthest removed from sensations, are the most difficult of attainment. It is only when we come to ascertain what were the principles Aristotle conceived as standing thus at the apex of philosophy, that we see the wide difference between his speculations and modern speculations. There are, he thinks, four first principles or causes.

I. The *formal cause* or *essence*, known under the scholastic titles of 'quiddity' and 'substantial form,' is what may be called the *raison d'être* of a thing. Although form cannot be disjoined from substance in fact, it can in thought,—and that was enough for the ancients. We still preserve the idea in such phrases as, 'the essence of good government

consists in reconciling order with progress ; ' or, ' the essence of a circle consists in the equi-distance of every point in the periphery from the centre.' * The substantial form, in short, is that which makes a thing to be what it is. N.B.—The distinction between the *essence of a thing* and the *essence of our conception of a thing* had not then been admitted into philosophy.

II. The *material cause*—*causa materialis*—ἡ ὕλη καὶ τὸ ὑποκείμενον—is the matter itself, conceived apart from its form. Under all the varieties of things we recognise something which exists as the *subject* of these varieties ; for example, the substance of the soul is something distinct from its phenomena.

III. The *motor cause*—efficient cause—ἡ ἀρχὴ τῆς κινήσεως—which plays so great a part in scholasticism, is a conception necessarily added to the two first-named causes, since these alone will not explain movement or change. But inasmuch as change is incessant, there must be some principle of change. Nature is not self-moved ; we must, therefore, assume a Prime Mover, himself immovable.

But even thus we fail to account for the phenomena of this changing universe. What is it which determines each particular movement to be that and not another ? What is it which causes the harmony, regularity, and beauty of the world ? Obviously a fourth cause :—

IV. The *final cause*—τὸ οὐ ἕνεκα καὶ τὰγαθόν. This gives to every movement an aim, and a benevolent aim. The good of each and the good of all is the final cause of every change.†

* 'En contemplant les choses, nous voyons qu'elles sont différentes entr'elles, et que chacune a quelque chose de particulier qui la distingue des autres : c'est ce qu'on appelle l'essence d'une chose, qu'on définit *ce qui fait qu'une chose est ce qu'elle est.*'—S. GRAVESANDE: *Introd. à la Philosophie*, Leyden, 1737, p. 5. This is strictly Aristotelian, and explains the phrase by which Aristotle defines the formal cause :—ἡ οὐσία καὶ τό τί ἦν εἶναι. The phrase is not grammatically explicable. See TRENDelenberg's edition of the *De Animâ*, 1833, pp. 192–471 ; or Zeller: *Philosophie der Griechen*, 1860, ii. 147.

† 'Finis vero est, quo res tendit. Finium alii præoptati, alii consequentes. Præoptati ejus generis sunt, ut valetudo quæ medicamentis et deambulatione com-

It is apparent, on the most casual inspection, that no one of these causes can be verifiable; no one of them is susceptible of any stronger guarantee than that of a certain logical concordance in the assumptions we make respecting them; but inasmuch as they pass beyond the sphere of ideas, and claim to represent external realities, Verification is indispensable; yet it cannot be applied. Such conceptions are, therefore, utterly unscientific. Nevertheless the slow evolution of Science has not altogether disengaged itself from their trammels. Even in the present day there are not wanting men of eminence who firmly uphold the validity of final causes, and believe teleological argument to be an instrument of research. This is owing to the lingering influence of the Subjective Method, an influence almost entirely banished from astronomy, physics, chemistry. The Objective Method teaches that it is idle to assign a final cause, unless we believe that we have, or can have, authoritative knowledge of what actually were the Creator's intentions: and such knowledge Science modestly disclaims; it endeavours to co-ordinate facts; assumptions respecting the intentions of the Creator are not verifiable; if we accept them as we accept other transcendental conceptions, they can only be an unknown quantity in our calculation. The futility of the teleological argument may be seen in this, that until we have discovered the law of succession, until the facts are

paratur. Consequentes vero ejus generis sunt, ut modicatio et deambulatio: primum enim valetudinem, deinde ea quæ valetudini faciunt, quærimus.'—HERMOLAUS BARBARUS: *Compendium scientiæ naturalis ex Aristotele*, 1547, *Lib. i.* p. 6. I cannot quote from this once renowned and now forgotten scholar, without remarking that, although he occupies a prominent place in the correspondence of scholars during the latter part of the fifteenth century, and was thought by ERASMUS to be a 'divine man,' whose name could never die, he has so completely passed out of sight that most Encyclopædias and Biographical Dictionaries do not even mention him. A good account of him is given in JOHNSON: *Life of Linacre*, 1835. SCALIGER speaks of him as 'incomparabilis doctrinæ, divinæ probitatis.'—*Contra Cardanum*, 1557, Exerc. clvii. The notices in TIRABOSCHI: *Storia della Lett. Ital.*, 1807, vi.; in HEEREN: *Geschichte der classischen Litteratur im Mittelalter*, ii. (*Werke*, 1821–8, v.); and in CORNICI: *I Secoli della Lett. Ital.*, 1818, iii., are obviously at second hand, drawn probably from that marvellous torso of Italian erudition, MAZZUCHELLI: *Gli Scrittori d'Italia*, 1758, vol. ii. parte i. 256.

co-ordinated, the assumption of a final cause brings with it no illumination, and when the law has been discovered, the addition of the final cause brings no increase of knowledge.

It is a necessary consequence of his conception of Science that it deals not with generalities laboriously arrived at through inductions, and capable of verification both at every ascending step of induction, and every descending step of deduction, but with generalities which are inaccessible to verification. Hegel has a characteristic sneer at the physicists of our day : he says ‘Aristotle’s Physics are Metaphysics; that which physicists tell us of is what they have seen or what delicate instruments they have made, not what they have thought.’* The sneer falls harmless, for the accusation is ludicrously inexact; but it may be retorted on the metaphysicists that they tell us only what they have thought, and not what they, or any one else, can have *seen*. Aristotle did use his eyes. But unhappily, while duly impressed with the importance of Fact, he was under the dominion of the metaphysical delusion that a better explanation of the causes of phenomena was to be learned from ideas than from phenomena themselves. Thus he not only quitted the observation of phenomena and their relations, for speculations upon Being apart from phenomena, but, by an inevitable consequence of this error, he sought the secret of Being in verbal and logical distinctions.

This is what he found: Being is understood in various senses. It is either substance or accident; it is either a possibility or an actuality. (These four words form the texts of interminable discussions throughout the history of metaphysics. A clear insight into the distinction between objective and subjective existence would have put an end to these discussions at once; but such an insight was long in being reached.) What is Substance? According to Aristotle it has four different meanings:—

I. *Matter*, or the substratum (τὸ ὑποκείμενον), which,

* HEGEL: *Gesch. der Phil.* ii. 337.

because it is the subject of all attributes, and never an attribute itself, is called Being *par excellence*.

II. *Form* (τό τι ἦν εἶναι) is that which is in itself and for itself. Combined with Matter, which is indeterminate, it constitutes individual existence. Thus these two categories complete the idea of Being, the one representing its potentiality (δύναμις), the other its actuality (ἐνέργεια): for Matter is Substance only *in posse*; Form is Substance *in esse*.

III. *The Universal*. This Aristotle rightly regards as an illusion of philosophers, meaning Plato above all. The Universal cannot be Substance, for the substance of an individual belongs only to the individual, whereas the Universal is common to many. Moreover Substance is not an attribute, the Universal is.

IV. *Genus*. This fourth sense in which Substance is understood is rejected on the same grounds as the third.

The distinction, which played so great a part in Arabian and Scholastic philosophy, between Matter and Form, between potential and actual existence, the *δυνάμει ὄν* and the *ἐνεργείᾳ ὄν* or *ἐντελεχεία ὄν*, is an interesting example of the metaphysical tendency to transport a subjective distinction into the objective world, to make ideas the prototypes of things. Matter was supposed to exist only as a possibility before it received its Form (a confusion of the non-specified with the non-existent), the Form giving it actuality. Brass, for example, before it is made into a statue by the sculptor, exists as brass, in forms quite as real as that of a statue, though the Peripatetics declared it to be indeterminate matter which passed from possibility into actuality on receiving the form of the statue, and, ceasing to be brass in general (which it never was), became a brazen thing.

I have already explained in the Prolegomena the fallacy which is involved in this distinction of potential and actual, and which applies, of course, to the distinction between substance and accident. It is fundamental with Aristotle. Without this distinction his system cannot stand. He never suspected that there was no objective reality in his famous

δύναμις ; that whatever is is, and whatever is not is not. He regarded the conquering general as one who, before the battle had been fought, was equally a conqueror, though a conqueror then *in possibility*, ἐν δυνάμει. But it is clear that this existence *post rem* is the resultant of a complex concurrence of conditions, and can only be assigned *ante rem*, on the assumption that we may form our conception of the general before the battle out of all the subsequent conditions. It is perfectly true that could we have clearly seen all the existing conditions, we should also have seen all their effects ; could we have seen the strength, skill, and courage of his army, and the weakness of the enemy, we should have foreseen the victory, and esteemed him as the victor. But this would be to annihilate history. We should see simultaneously that which in reality was developed successively. Strictly speaking, the victor both before and after the battle is a man standing in definite relations to conditions past and present. These conditions are in turn related to others ; they are products of preceding conditions, and will produce successors. Our conception of the man is determined by our knowledge of these. Events being in reality successive and not simultaneous, and our imperfect vision of existing conditions enabling us only to foresee some of their results, our conceptions of what is possible (*i.e.* what may result) depend on our knowledge of the actual. As a fact nothing really exists till it exists ; and nothing exists possibly ; for possibility is only the uncertainty of our ignorance.

Matter as potential existence is a subjective fiction. Equally subjective is the distinction between existence *per se* (κατ' αὐτὸ) and existence *per accidens* (κατὰ συμβεβηκός). There is no accident in nature. Everything is essential. The pimple on a philosopher's face, which, according to the conveniences of language, would be called an accident, not pertaining to the essence of the man, unnecessary to our conception of the philosopher, is nevertheless objectively as necessary and essential as the skin it disfigures, or as any other part of the complex group of realities which in their

totality constitute the man. There are grammatical conveniences in separating the predicate from the subject, and logical conveniences in separating the variable from the invariable appearances, designating the former as accidental and the latter as essential. But there are no such distinctions in being.

Substance is commonly understood as that which would remain behind when all the accidents were removed. But a thoroughgoing analysis leads us to pure Nothing as the termination of such a removal of all accidents. Potential existence is a fiction ; useful, it may be, in the department of Logic, but dangerously illusive in Metaphysics.

The theory of Matter and Form is an attempt to solve the problem Plato solved by his theory of Ideas. Aristotle saw clearly enough the untenability of the ideal theory, but his conception of Substantial Forms was only a modification of it, and was open to similar objections. Plato said, that the Idea of an animal pre-existed, and when united with material elements, there was a living reality as a result. Aristotle said, that the animal became a living reality when the potential animal passed into actuality, its vital principle being the Form.

I may here notice another and kindred conception which the Aristotelians seized with great avidity, namely, the confusion of logical with real in the matter of contraries. Thus originated the famous principle of Privation, the contrary of Form. He first laid down the axiom that Form could only be one of two contraries ; and as both these contraries could not exist at one and the same instant, the active interference of Privation became necessary to account for the contrary which was at any instant absent. Thus a man must be either cultivated or non-cultivated. He cannot at the same time be both. That which prevents his being either is the Privation of the Form. This verbal jugglery not only found wondering admirers in ancient times, it has found admirers in our own.*

* ' Voilà cette théorie fameuse de la matière et de la forme si souvent reprochée

By ringing the changes on Virtual and Actual, Substance, Form, and Privation, he and his followers built up a theory of the universe, which, as intellectual gymnastics, had undoubted value, but which was not likely to lead to discovery. Indeed the futility of the whole scheme is shown in its utter incompetence to explain even the simple laws of motion. It was an unconscious effort to make Logic do the work of Metaphysics; and the Logic itself had extremely questionable premisses.

à Aristote, et qu'on critiquera sans doute plus d'une fois encore. Pour moi, je la trouve simple et vraie.' BARTHÉLEMY ST.-HILAIRE, *La Physique d'Aristote*, 1862, i. p. xxviii.

CHAPTER V.

ARISTOTLE'S PSYCHOLOGY.

IN my work on Aristotle I have analysed all the writings which directly or indirectly treat of psychological questions; and from it I may extract a few passages containing the leading doctrines.

The first part of the celebrated *De Animâ* treats of Life in general. Not until the fifth chapter of the second book does it approach the question of Sensibility.

Having defined sensation 'the result of a motion and an impression,' he starts this difficulty:—Why is there no sensation from the senses themselves? That is to say, why, in the absence of external objects, do not the senses give sensation, since fire and earth and the other elements are present in them, and it is from these that sensation is derived?

The answer runs thus:—Because the sensibility is not in a state of *actuality*, but only of *potentiality*; * and therefore, it is with it as with a combustible body, which alone, without something on fire, does not burn; for, otherwise, it might set fire to itself, and could stand in need of no actual fire.

He then indicates the distinction between primary and secondary qualities; each of the special senses perceives a special quality, as sight, colour, hearing, sound, &c.; but, besides these, there are qualities more generally perceived, belonging not to one sense alone, but to all in common—such are motion, form, number, magnitude.

* It will not escape the reader that this answer is only a restatement of the difficulty in other words; but it has more the appearance of an answer than that given by HERMOLAUS BARBARUS: *Compendium Scient. Nat. ex Aristotele*, 1547, v., *de Animâ*, p. 51.

'It is difficult to specify the organ percipient of tangible qualities, whether or not it is the flesh, and that which is analogous to flesh in other creatures; yet flesh is only a *medium*, and the essential organ, *πρῶτον αἰσθητήριον*, must be something different and internal. . . . Is, then, this sentient organ within the flesh, or is it the flesh itself which is immediately perceptive? No indication can be obtained from the fact of sensation being simultaneous with tangible impression, for were any one to extend a membrane over his flesh, the part would be equally sensible when touched, and sensible at the moment of contact; and yet, clearly, the sentient organ cannot be in that membrane. . . . When the sentient organ itself is touched, no sensation can there or then be produced, any more than a white object can be seen when placed immediately over the surface of the eye; and thus it is evident that the part perceptive of tangible impressions must be *internal*.' Although not stated here, we know that by this *internal* part, which is perceptive, he means the heart, the central seat of all sensibility.

Chap. XII. is on perception. 'It must be admitted that each sense is receptive of the *sensible forms* of things (*ideas*, images) without their *matter*, as wax takes the impress from a seal-ring without the iron or gold of which the ring is made.'

Why, then, do plants not feel, seeing that they have a psychical organ (*μόριόν τι ψυχικόν*), and are impressible by tangible objects? The reason is that they want the *central* faculty (*μεσότητα*), which alone would admit of their being impressed by sensible forms without the matter. Constituted as they are they receive the matter along with the forms.

BOOK III., *Chap. I.*, continues the discussion of Sensibility. We have, he says, but five senses. Touch makes us aware of whatever is tangible; all other qualities are perceived, not through touch, but through the media air and water. The sentient organs are constituted of these two simple bodies: the pupil is composed of water, the organ of hearing is com-

posed of air, and the organ of smell is of one or the other. Fire forms no part of any organ; or rather it is an element common to all, since there is nothing sentient without heat.

We are furnished with several senses, instead of one, in order that the common properties of bodies—motion, magnitude, number—may the less readily escape notice. If vision were our only sense, then all other qualities except colour would escape notice, seeming to be identical with it. But as common properties are manifested by different bodies, it is evident that they must also be different.

Chap. II.—‘Vision must be by sight, or by some other sense; but if by some other sense, then *it* will be perceptive of sight and colour, the subject of sight, and thus there will be two senses for one office, or the sight itself will be the percipient. But if to perceive by sight is seeing, and if that which is seen is colour, or something having colour, then if any sense is to see, that which sees must first have colour.* It is thus manifest that perception by sight is not a single perception, for when we cannot see, it is still by sight that we judge both of darkness and light, although not in the same manner.’

This, as may be imagined, has been an enticing passage to commentators, and is full of pitfalls both of equivocation and psychological subtlety. Much of the obscurity of psychological questions arises from the tendency, almost irresistible, to refer all perceptions to the organs of sense, instead of to that consciousness which is affected by the organs of sense in their action: *e. g.* perceptions are referred to the retina rather than to the optic centre. Hence, also, the confusion of objective with subjective, as when we speak of a colour which is unseen, of a sound which is unheard.

‘If motion, production, and impression are in the product, it follows that sound and hearing, in an active state, must pre-exist *potentially* in hearing; for the action of the motor

* Wäre nicht das Auge sonnenhaft,
Wie könnten wir das Licht erblicken?

GOETHE.

exists naturally in that which is acted on. It is, therefore, not necessary that the motor itself should be in motion. The action of a sonorous body is sound, or sounding; that of the auditory sense is hearing; for hearing is double, as sound is double. The same applies to other senses and perceptions. Since production and impression are not in that which acts, but in that which is impressed, so the action of the object of perception, and the sensibility, are in the sentient organ. But while for some senses the two states have been distinguished by separate names—such as sound and hearing—there are others for which one or the other state is without a name. Thus, the action of vision is called sight, but the action of colour is unnamed; the action of the gustatory sense is called taste, while that of savour is without a name. Since the action of the object and the sentient organ is one and the same, though different in mode of acting, it follows that hearing and sound in this sense must be lost together, or together preserved. But this does not hold of such relations in *potentiality*. The earlier writers expressed themselves ill, in saying there could be neither black nor white without sight, nor savours without taste. And yet they were partly right; for as senses and sentient impressions have a twofold acceptation, according to their potentiality or activity, so what was advanced by these writers may be true of one state, and not true of the other. But they reasoned about things considered as isolated which do not in truth admit of being isolated.'

'Each sense is perceptive of its own objects, is innate in its own organ, as an organ, to discriminate qualities—Sight judging of black and white, Taste of bitter and sweet. But how do we perceive that qualities differ? Evidently by some sense, because the impressions are sentient; and the flesh cannot be that final sentient, *ἔσχατον αἰσθητήριον*, since to judge of qualities it must of necessity first touch bodies.'

His meaning here is by no means clear. He says emphatically that we have only five senses; that each sense can only discriminate its own objects; that that which perceives

white to be different from sweet cannot be the sense of Taste nor the sense of Sight, yet it must be a sense, because the impression is sentient; finally, he says that the sense cannot be Touch, because to judge of qualities, that sense must first touch bodies—by which he probably means that white and sweet not being tangible cannot be perceived by Touch.

What, then, is this judicial sense? He has nowhere told us. He enters upon discussions as to whether the judging faculty is divisible or indivisible, and this numerically or locally; but *what* it is, or *where* it is, he has not explained in this treatise. Elsewhere we gather that he means the common sensorium, which is in the front centre (heart) of each animal.*

Chap. III.—‘The soul being characterised generally by the faculties, locomotion and thought, judgment and sensibility, it would seem that thought and reflection are considered to be forms of sensation. All writers assume that thinking, like feeling, is corporeal, and that Like is comprehended by Like. But they should have noted the liability of the senses to produce error. It is manifest that feeling is not the same as reflection; the one belonging to all creatures, the other only to a few. Neither is the judging faculty, which discerns right from wrong, to be confounded with sensation; for sensation being derived from particulars is always true, and belongs to all animals; but error lies in judgment, and none are liable to error save those which have reason.’

Imagination is then treated. He says it is neither sensation nor judgment, yet it is never called up without sensation. It is the faculty by which an image of some kind is called up within us, and is to be ranked with those faculties, such as sensation, opinion, and knowledge, by which we form judgments.

Chap. IV. has peculiar interest, being devoted to the *νοῦς*,

* *ἐν τῇ κοινῇ αἰσθητήριον.*—*De Juventute*, i. 467. Compare also *De Somno*, ii. 454.

or intellect, 'that part of the Soul by which it both knows and reflects.'

'If thinking be similar to sensation,' he says, 'then may it be some kind of impression by the object of thought, or some other analogous agency. But that which thinks must then be passive, ἀπαθές, receptive of the Forms of objects, and identical with the objects in potentiality, though not so in actuality. In a word, the Intellect must be related to objects of thought, as sensibility is to objects of perception. Thus the so-called Intellect of the Vital Principle (and by Intellect I mean that which judges and compares) has in actuality no existence prior to the act of intelligence.* It is very improbable, therefore, that the mind should have been commingled with the body; for if this were so, it would be a quality of some kind, as hot or cold; or *it would have some kind of organ such as there is for sensation*; but there is none such.'

'It is well said that the Soul is the *place of Forms* (τόπος εἰδῶν); but this is not to be understood of the whole soul, only of the cogitative part; and of Forms, not in actuality, but in potentiality.'

He argues that the reflective faculty is not the sensitive faculty in a state of repose. 'The mind judges of flesh and ideal flesh, either by some different faculty, or by being itself differently affected. It is by sensibility that we judge of hot and cold and other properties of flesh; but it is either by some distinct faculty—or as a curved line is to a straight line—that we judge of ideal flesh.'

Chap. V.—The soul is creative. It is essentially an energising influence. Knowledge *in activity* is identical with the object; but in potentiality, it pre-exists in the indi-

* οὐθὲν ἔστιν ἐνεργεία τῶν ὄντων πρὶν νοεῖν. This, if I understand it aright, means that the mind has no substantive existence, but exists only in act, as a function. The passage is very obscure. TRENDelenburg, who has a long note on the parenthesis, which does not require one, is silent on the only real difficulty. TORSTRICK says, 'intellectus non est actu idea antequam cogitet' (οὐκ ἔστιν αὐτοῦ φύσις οὐδεμία ἀλλ' ἡ αὕτη διὰ δυνατόν = οὐθὲν ἔστιν ἐνεργεία τῶν ὄντων πρὶν νοεῖν), ed. *De Animâ*, p. 198.

vidual. 'Yet, rigorously speaking, that cannot be said to pre-exist which sometimes is, and sometimes is not, reflected on. But that alone, whatever it be, which is separate from everything else, is deathless and eternal. We have no memory of it because it is passionless (*ἀπαθής*); and the impressible mind is perishable, and without it there can be no reflection.'

Chap. VI. briefly reiterates the argument that the senses are free from error, which arises solely from the judgment.

Chap. VII.—The opening sentence may be read as a vague anticipation of the modern hypothesis, that knowledge, or rather the aptitude for acquiring knowledge, becomes developed in the race, and is thus transmitted from parent to child, so that the offspring of European parents is capable of acquiring a higher degree of intellectual development than the offspring of Australian parents reared under similar conditions.

Aristotle has written much about the senses in several works. The treatise *De Sensu*, in the *Parva Naturalia*, is perhaps the best source we can consult; and it may, therefore, be analysed briefly here.

The early philosophers sought in the four elements, earth, air, fire, and water, for the several bodies constituting the senses. As there are five senses, and only four elements were generally recognised, a fifth element was imagined. What that element is, Aristotle does not say; elsewhere we learn it is the Ether.

I.—*Vision.*

Every one, he says, believes Vision to be of fire; the reason is that men misconceive the phenomenon of sparks dancing before the eyes when rubbed, especially in the dark. But if we cannot deny that we feel and see that which we see, it necessarily follows that the eye sees itself. Now, why have we this sensation only when the eye is rubbed?

The explanation offered is that smooth bodies shine naturally in the dark, though without producing light; now the pupil of the eye is smooth; and when the eye is rubbed it seems as if that which was one became two. The rapid motion makes the eye which is seen and that which sees appear different. The phenomenon is not producible unless the eye be rubbed quickly, and in darkness (I suppose he means by darkness the eye being closed, otherwise the qualification is erroneous), smooth bodies shine no less than certain fish heads, and the ink of the cuttlefish. When the eye is rubbed slowly, the sensation is not such as to make us think that what sees and what is seen are one and the same, so that the eye may see itself as in a mirror.

This, it must be confessed, is not a fortunate attempt at explanation. Newton, in one of his celebrated queries added to the *Optics*, first clearly stated that the sparks which arise when the eye is rubbed 'arise from such motions excited in the bottom of the eye by the pressure and motion of the finger, as at other times are excited there by light for causing vision.' But it was Johannes Müller, stimulated by the *Farbenlehre* of Goethe, who placed beyond a doubt the fact that each special nerve of sense responds only in one special manner, no matter how various may be the stimuli, so that whatever excites the optic nerve excites a luminous sensation; whatever excites the auditory or gustatory nerves excites sonorous and sapid sensations; and the pressure on the skin-nerve which excites pain, excites in the optic nerve not pain, but a luminous sensation.

Aristotle, knowing nothing of the properties of the optic nerve, could not, of course, give an explanation of the phenomenon. But his explanation is better than that of Empedocles and Plato, who held 'the eye to be of fire.' He asks, *à propos* of this, 'If vision is produced when light passes from the eye, as from a lantern, why can we not see in the darkness? To pretend that light is extinguished by the darkness, on quitting the eye, is absurd.'

He thinks Democritus right in asserting that the vision

is "of water," but wrong in asserting it to be an image (appearance, *εἰκφασίς*), for the image is produced because the eye is a smooth surface, and vision is not in it, but in the seeing faculty. The affection is a refraction, *ἀνάκλασις γὰρ τὸ πάθος*. But in those days the theory of images and refraction was not understood. Moreover, it is absurd not to have asked why the eye alone can see, and not other bodies.

'It is correct to say that vision is of water; not because it is of water, but because it is diaphanous, and this quality is common to air. Water, however, retains and receives it better than air, and that is why the pupil and the eye are of water. The soul is assuredly not at the surface of the eye, but within; hence the eye must be translucent and capable of receiving light. Thus men in battle wounded near the temple, so that the optic channels (nerves, *πόροι*) are divided, have felt darkness come on as if a lamp had been extinguished; for indeed the diaphanous and the pupil form a sort of lamp.'

'Thus it is evident we must assign an element to each sense, and say that the part of the eye which sees is of water, that which hears is of air, and that which smells is of fire. Touch is earthy. Taste is a kind of Touch. The eye is a part of the brain; and the brain is the moistest and coldest part of the body. Touch and Taste are connected with the heart, which is the hottest part of the body.'

We have next an exposition of Colour. He defines Light 'the colour of the diaphanous *per accidens*;' or, as he expresses it in the *De Animá*, 'colour is a movement of the diaphanous,' which may be interpreted into an anticipation of the modern undulatory theory, the diaphanous standing for the elastic ether, and the movement being its undulations.

'When there is an igneous body (*πυρῶδές τι*) in the diaphanous, we have light; when none, we have darkness.*

* TELESIO held Light to be visible heat—*lux caloris species est*—which is tinged by the colours of the objects through which it passes.—*De Rerum Naturâ*, 1586, vii. 292-3. This is a much more superficial view than that of Aristotle;

That which we call the diaphanous does not belong exclusively to water, air, and other bodies which are translucent. It is some common nature and force, which not existing separately exists in these bodies and in others, in some more and in some less.*

What that force was supposed to be I cannot discover from the writings now extant; he seems to have considered it sufficiently described by its name.

'As all bodies have necessarily a limit, so also has the diaphanous, and this limit is colour, which is either the limit of bodies, or *at* their limit; and hence the Pythagoreans call colour "the surface."'

'Colour being the limit of the diaphanous in a limited body, it is possible that that which produces light in the air will also be in the diaphanous in limited bodies, or will not be there; and thus, as in the air there may be light or darkness, so in bodies there may be white and black. The white and black may be placed side by side, so that both may be invisible separately, on account of their minuteness, yet, nevertheless, the result of the two will be visible. But the result can be neither black nor white; but as it must have some colour the colour will be a compound of the two. That is how different colours arise. Many colours are also produced by the combination of the parts: thus three may be arranged with two, or four, and other combinations. Those colours which depend on proportional numbers are harmonious, such as purple and scarlet.†

and the same may be said of most of his deviations from the doctrines of the Stagirite.

* ἀλλὰ τίς ἐστι κοινή φύσις καὶ δύναμις, ἥ χωριστὴ μὲν οὐκ ἔστιν, ἐν τοῦτοις δ' ἐστὶ καὶ τοῖς ἄλλοις σώμασιν ἐνυπάρχει, τοῖς μὲν μᾶλλον τοῖς δ' ἥττον.

† For an elaborate exposition of the views held by the ancients on the subject of colour, see PRANTL: *Aristoteles über die Farben, erläutert durch eine Uebersicht der Farbenlehre der Alten*, Munich, 1849. But perhaps the most intelligible account is that given by GOETHE: *Geschichte der Farbenlehre. Werke*, xxxix.

II.—*Taste and Smell.*

‘These have great similarity, though produced in different organs. The nature of flavours is more evident than that of odours, because our sense of smell is less keen than it is in other animals; on the other hand, we have Touch more sensitive than any other animal, and Taste is a kind of Touch.

‘Although water is insipid by nature, it is necessary that water should contain all flavours which escape our perception on account of their feebleness; or that it should contain a matter which is the germ of all flavours; or finally, that water having no difference of flavour in it, the cause is heat. Thus the flavour of fruit is developed by heat. All the flavours to be found in fruits are to be found also in the earth. At least the ancients thought that water varied with the soils through which it passed, which is evident from salt waters, as salt is also a kind of earth.* Thus water filtered through cinders contracts a bitter taste, and so of the rest. We may hence see why plants have their various flavours; for moisture, like everything else, is modified by its opposite, and dryness is the opposite of moisture. Thus moisture is modified by fire, for fire is by nature dry. Thus when something sapid is dissolved in water, the water becomes sapid; and in the same way nature acts upon the dry element, and the earthy element: it filters the moisture through the dry and earthy, setting it in motion by heat, and giving it all the necessary qualities. This modification of moisture is flavour.’

‘As various colours arise from the combinations of black and white, so various flavours arise from the combinations of sweet and bitter; and these combinations may be proportional or indefinite. Those which are agreeable depend on numerical proportion. The kinds of flavour resemble those of colour: both are seven in number.’

* Who were these ancients? The commentators declare that METRODORUS and ANAXAGORAS are alluded to. Perhaps so; yet the opinion may be found very distinctly expressed by HIPPOCRATES: *De Aëre, Locis et Aquis*.

‘Odours are perceptible in air and water; they are transmitted by the diaphanous which is common both to air and water. That water alone suffices is proved by the fact that fish have the sense of smell. Odour is dry flavour conveyed by the moisture in air and water. All sapid bodies are odorous.’

III.—*Hearing.*

Either Aristotle forgot to include Hearing in this treatise, or else the chapter has been lost. But his views are expressed in the *De Animá* (ii. 8), from which we may borrow them in a compressed form.

‘Sound is both potential and actual; for we say that some bodies, such as sponge, wool, &c., are without sound, and others, as brass, wood, hard and smooth bodies, have sound, because able to make sound *actual* by the *action of the medium between the object and the ear*. Actual sound is the result of something in relation to something, and in something; for its cause is percussion. But with only one body there can be no percussion; so that the sonorous object sounds by its relation to another. Without movement there can be no percussion, and sound is not produced by the percussion of every substance; and hollow bodies create, by reflex, many percussions after the first, owing to the medium within them having been set in motion and being unable to escape. Sound is audible in air, and less distinctly in water.* But neither air nor water can be the cause of sound, since there must be a percussion of solid bodies against each other and against the air.’

‘A vacuum is justly called the lord of hearing (*κύριον τοῦ ἀκούειν*), for the air appears to be a vacuum, and when moving continuously creates hearing. But being very diffident, it gives out no sound, unless when that which is percussed is smooth: in this case the air becomes *uniform* over

* An error which observation might have guarded against; since very simple experience shows water to be a better conductor of sound than air. The velocity with which sound traverses water has been calculated as four times its velocity through air.

its surface, for the surface of a smooth body is *one*. Every sonorous body sets in motion the air which is, by continuity, one with the organ of hearing; and sound being in the air, the air without the organ sets in motion the air within. An animal, therefore, does not hear in every part, for every part does not contain air. The air itself, owing to its diffuence, is without sound; but when confined, its motion produces sound. The air within the ear is so immured as to be incapable of escape;* and this, in order that the sense may perceive accurately all variations of its movement. And thus we are enabled to hear in water; for the water cannot gain access to the congenital air, or pass through the convolutions of the ear. The ear is constantly giving out sound, as a horn does; for the air within it is continually moving in some peculiar manner. Hence we speak of hearing by a vacuum and something resonant, because we hear by the part which contains the air confined within it.'

IV.—*Sensation in general.*

Having passed the Senses in review, he then touches on certain general questions relative to sensation. And first of its divisibility *ad infinitum*.

If bodies are infinitely divisible, are the impressions they make on us equally so? This question Aristotle answers with manifest superiority over Sir William Hamilton, who, probably from an unsuspected reminiscence, has used the

* The translation in the text came spontaneously from my pen, because I was not aware that the language of Aristotle had puzzled the commentators. (See TRENDLENBURG, p. 386, for an example.) The sense is so plain that I cannot even now comprehend how it has been missed. Aristotle says the air in the ear is immovable or unmoved, ἀκίνητος; *immobilis* is BUSSEMAKER'S translation, *immovable* is COLLIER'S. Yet, inasmuch as the movement of this air is mentioned immediately afterwards, the verbal contradiction is glaring; yet it is only verbal. If we suppose that ἀκίνητος has reference to the air which ἐν τοῖς ὦσιν ἐγκαταφωκo-δύμεται (is immured within the ears), the meaning is obvious enough. A man is said to be immovable from his studio or bureau without any imputation on his power of movement; but commentators, boggling at small contradictions, and passing by great ones without remark, would point out that a man cannot be immovable if he move at all.

very same illustrations to justify his own doctrine of 'latent consciousness.' That our consciousness may arise out of unconscious modifications is evident, according to Hamilton, in the fact of a *minimum visible*, which is the smallest surface that can be seen: 'It is plain that if we divide this *minimum visible* into two parts, neither half can by itself be an object of vision or visual consciousness. They are, severally and apart, to consciousness as zero. But it is evident that each part must have produced in us a certain modification, real though unperceived, for as the perceived whole is nothing but the union of unperceived halves, so the perception is only the sum of the two modifications, each of which severally eludes our consciousness.'*

The fallacy of this argument may be disclosed in a counter illustration: the stick which at a distance of three feet just touches us, and produces the sensation of contact, will no longer produce that sensation if broken in half, and held towards us at a distance of three feet: it will not affect our consciousness at all: the two halves thus pointed towards us do not produce modifications in our consciousness the sum of which is perceived when the whole touches us. Hamilton's mistake lies in the vague conception of a *minimum visible*, which being the extreme point of visual consciousness, anything beyond that extreme must necessarily pass altogether beyond the sphere of consciousness. It does not become *latent*; for consciousness it becomes *non-existent*. The difference *in degree* has amounted to a difference *in kind*.

Aristotle justly says that the sensible qualities are named such because they produce sensation. 'All magnitude is necessarily sensible. Were it otherwise, there would be bodies which had no colour, no weight, nor any other quality, and which consequently would not be perceptible to us, since it is by such qualities that we have perception. But the sensible is composed of sensible qualities, and assuredly not

* HAMILTON: *Lectures on Metaphysics*, 1859, i. 350. It is strange that neither the erudite Hamilton, nor his erudite editors, should have mentioned Aristotle in this place.

of mathematical definitions.* How do we form any judgment of sensible things? By the intellect? But the ideas are only possible when based on sensations. The solution of these questions makes manifest why the kinds of colour, taste, &c., are limited, or finite. It is because in all things which have extremes there must also be intermediate points of limitation; now contraries are extremes, and in all sensible impressions there are contraries, as white and black in colour, sweet and bitter in taste. A body that is continuous therefore may be infinitely divided into *unequal* parts, but its divisibility into *equal* parts is finite. That which is not continuous as a whole has its parts (species) finitely divisible. Since we call the sensible qualities species, and they are always continuous, we must distinguish between the *actual* and *potential*; and hence we do not see the millionth *part* when we see the million, nor do we hear the quarter-tone when we hear the melody; the interval is imperceptible and is lost in other sounds. It is the same with the infinitely little in other sensibles: they are *potentially* visible, but not *actually* visible when isolated.† Thus the line of one foot is potentially in the line of two feet, but exists actually only when alone. The infinitely small qualities are lost in surrounding bodies, as drops of perfume poured into the sea. This infinitely little which transcends sensation is neither sensible in itself, nor by itself, for it is only sensible potentially in the larger quantity.'

I have preserved the Aristotelian phraseology, but the reader will find little difficulty in disengaging the meaning, and will perceive how this distinction of the potentially and actually visible agrees with and yet rises superior to Hamilton's idea of our being unconsciously modified by that which

* πᾶν εἶναι μέγεθος αἰσθητόν· ἀδύνατον γὰρ λευκὸν μὲν δρᾶν μὴ πόσον δέ· εἰ γὰρ μὴ οὕτως, ἐνδέχοιτ' ἂν εἶναι τι σῶμα μὴδὲν ἔχον χρώμα, μὴδὲ βάρος, μὴδ' ἄλλο τι τοιοῦτον πάθος· ὥστ' οὐδ' αἰσθητὸν ὅλως· ταῦτα γὰρ τὰ αἰσθητά. Τὸ ἄρ' αἰσθητὸν ἔσται συγκείμενον οὐκ ἐξ αἰσθητῶν. Ἄλλ' ἀναγκαῖον· οὐ γὰρ δὴ ἔκ γε τῶν μαθηματικῶν. vi. 445.

† δυνάμει γὰρ ὁρατά, ἐνεργείᾳ δ' οὐ, ὅταν χωρισθῇ.

never reaches the consciousness, so that two zeros may make an unit.

In the concluding chapter he enters upon the question whether we can have two different sensations in the same instant of time; a question of some psychological interest. He answers it in the negative.

In reviewing Aristotle's opinions on the Senses, it is requisite to bear in mind that he was wholly without the anatomical and physiological, no less than the physical and chemical knowledge, which could have given an assured basis to his speculations. It is a subject which, even in our own day after so much laborious inquiry, is only beginning to be understood; and the psychologist will have many years yet to wait before science furnishes him with the data he requires.

I must not linger longer over Aristotle, the more so as his researches in Physics and Biology have been handled by me in some detail in the work already mentioned. There I have pointed out how his reliance on experience and induction led him to fruitful results, and how the *à priori* Method substituted for observation and induction led him into error. The combination of the two tendencies is very noticeable in his works. It prevents his being clear and consistent, but it gives his works a singular prestige. All schools find dicta there. All opinions seem more or less anticipated. He stimulates the activity of his readers, provokes them by his obscurity and irreconcilable assertions, and imposes on them by the weight of his intellect, so that they cannot help fancying he had some profound meaning in sentences which were mere guesses, incapable of proof. They meet with many passages which light up whole tracks of inquiry, and many subtle distinctions which have taken their place in philosophy, as for example that of the primary and secondary qualities of body; and they naturally suppose that passages obscure to them have an inner light.

The contribution of Aristotle to the historical evolution of

Science was considerable, although his special inquiries were seldom successful. He instituted the important science of Logic; directed men's attention to the necessity of examining the grounds of knowledge and the forms of thought. He also made philosophy embrace all topics of rational research. But his crowning glory was the impulse he gave to the purely scientific spirit by his constant appeal to Experience as the source of knowledge, and his insistence on the methods of Observation and Induction. If his teaching fostered the vexatious quibbling of schoolmen, it also fostered the scientific research of the Arabs. Both tendencies are more or less due to his influence, and hence it is that his mighty intellect may justly be regarded as the dominant power in all subsequent speculation, till the rise of the modern schools.

SUMMARY OF THE SOCRATIC MOVEMENT.

Socrates appeared during the reign of scepticism. The various tentatives of the early thinkers had all ended in a scepticism, which was turned to dexterous use by the Sophists. Socrates escaped this scepticism by a new development of Method. Armed with this instrument, he withdrew men from metaphysical speculations about Nature, which had led them into the inextricable confusion of doubt. He bade them look at man. Moral Philosophy took the place of physical and metaphysical speculation. The Cyrenaics and the Cynics attempted to carry out his method; but, as they did so in a one-sided manner, their endeavour was only partially successful. *

Plato, the youngest and most remarkable of the disciples of Socrates, accepted the Method, and applied it more widely. Nevertheless Ethics furnished the most important of his speculations. Physics were subordinate to and illustrative of Ethics. The Truth—the God-like existence—which he for ever besought men to contemplate that they might share it, had always an ethical object: it was sought by man for his own perfection. How to live in a manner resembling the Gods, was the fundamental problem which he set himself to solve. But there was a germ of scientific speculation in his philosophy, and this germ was developed by his pupil, Aristotle.

The difference between Socrates and Aristotle is immense: Plato, however, fills up the interval. In Plato we see the transition-point of development, both in Method and in Doctrine. Metaphysical speculations are intimately connected with those of Ethics. In Aristotle, Ethics only form one

branch of philosophy: the other branches usurp the larger share of his attention.

One result of Aristotle's labours was precisely this: he brought Philosophy round again to that condition from which Socrates had wrested it; he opened the world again to speculation.

Was then the advent of Socrates nullified? No. The Socratic Epoch conferred the double benefit on humanity of having first brought to light the importance of Ethical Philosophy, and of having substituted a new and incomparably better Instrument for the one employed by the early speculators. That Instrument sufficed for several centuries.

In Aristotle's systematization of the Method, and, above all, in his bringing Physics and Metaphysics again into the region of Inquiry, he paved the way for a new epoch—the epoch of Scepticism; not indeed the unmethodical Scepticism of helpless baffled guessers, like that which preceded Socrates; but the methodical and dogmatic exposure of the vanity of philosophy.

EIGHTH EPOCH.

Second Crisis in Philosophy—The radical imperfection of the Subjective Method again becomes manifest in the impossibility of applying its criterion.

CHAPTER I.

THE SCEPTICS.

§ I. PYRRHO.

IN the curious train which accompanied the expedition of Alexander into India, there was a serious, reflective man, who followed him from a purely philosophical interest: that man was Pyrrho, the founder of the Sceptical philosophy. Conversing with the Gymnosophists of India, he must have been struck with their devout faith in doctrines so unusual to him; and this spectacle of a race of wise and studious men believing a strange creed, and acting upon their belief, may have led him to reflect on the nature of belief in general. He had already, by the philosophy of Democritus, been led to question the origin of knowledge; he had learned to doubt; and now this doubt became irresistible.

On his return to Elis he became remarked for the practical philosophy which he inculcated, and the simplicity of his life. The profound and absolute scepticism with which he regarded all speculative doctrines, had the same effect upon him as upon Socrates: it made him insist wholly on moral doctrines. He was resigned and tranquil, accepting life as

he found it, and guiding himself by the general precepts of common-sense. Socrates, on the contrary, was uneasy, restless, perpetually questioning himself and others, despising speculations, but eager for truth. Pyrrho, dissatisfied with all the attempts of his predecessors to solve the great problems they had set to themselves, declared the problems to be insoluble. Socrates was also dissatisfied: he too declared that he knew nothing; but his doubt was an active, eager, questioning doubt, used as a stimulus to investigation, not accepted as a final result of all investigation. The doubt of Pyrrho was a reprobation of all philosophy; the doubt of Socrates was the opening through which a new philosophy was to be established. Their lives accorded with their doctrines. Pyrrho, the grand Priest of Elis, lived and died in happiness, peace, and universal esteem.* Socrates lived in perpetual warfare, was always misunderstood, was ridiculed as a sophist, and perished as a blasphemer.

The precise doctrines of Pyrrho it is now hopeless to attempt to recover. Even in antiquity they were so mixed up with those of his followers, that it was found impossible to separate them. We are forced, therefore, to speak of the sceptical doctrines as they are collected and systematized by that acute and admirable writer, Sextus Empiricus.

The stronghold of Scepticism is this: There is no criterion of truth. Plato had propounded his Ideal Theory, Aristotle refuted it by proving it to be purely subjective. But then the theory of Demonstration, which Aristotle placed in its stead, was not that equally subjective? What was this boasted Logic, but the systematic arrangement of Ideas obtained originally through Sense? According to Aristotle, knowledge could only be a knowledge of phenomena; although he too wished to make out a science of Causes. And what are Phenomena? Phenomena are the Appearances of things? But where exists the criterion of the truth of these Appearances? How

* All the stories about him which pretend to illustrate the effects of his scepticism in real life are too trivial for refutation, being obviously the invention of those who thought Pyrrho ought to have been absurd in conduct because sceptical in doctrine.

are we to ascertain the exactitude of the accordance of these Appearances with the Things of which they are Appearances? We know full well that Things appear differently to us at different times; appear differently to different individuals; appear differently to different animals. Are any of these Appearances true? If so, *which* are? and *how* do you know which are true?

Moreover reflect on this: We have five senses, each of which reveals to us a different quality in the object. Thus an Apple is presented to us: we see it, smell it, feel it, taste it, hear it bitten; and the sight, smell, feeling, taste, and sound, are five different Appearances—five different Aspects under which we perceive the Thing. If we had three Senses more, the Thing would have three qualities more; it would present three more Appearances: if we had three Senses less, the Thing would have but three qualities less. Are these qualities wholly and entirely dependent upon our Senses, or do they really appertain to the Thing? And do they *all* appertain to it, or only some of them? The differences of the impressions made on different people seem to prove that the qualities of things are dependent on the Senses. These differences at any rate show that things do not present one uniform series of Appearances.

All we can say with truth is, that Things appear to us in such and such a manner. That we have Sensations is true; but we cannot say that our Sensations are true images of the Things. That the Apple we have is brilliant, round, odorous and sweet, may be very true, if we mean that it appears such to our senses; but, to keener or duller vision, scent, tact, and taste, it may be dull, rugged, offensive, and insipid.

Amidst this confusion of sensuous impressions, Philosophers pretend to distinguish the true from the false; they assert that Reason is the Criterion: Reason distinguishes. Plato and Aristotle are herein agreed. Very well, reply the Sceptics, Reason is your Criterion. But what proof have you that this Criterion itself distinguishes truly? You must not return to Sense: that has been already given up; you must

rely upon Reason; and we ask you what proof have you that your Reason never errs? what proof have you that it is *ever* correct. A Criterion is wanted for your Criteri6n; and so on *ad infinitum*.

The Sceptics maintain that because our knowledge is only the knowledge of Phenomena, and not at all of Noumena—because we only know Things as they *appear* to us, not as they really *are*—all attempt to penetrate the mystery of Existence must be vain; for the attempt can only be made on appearances. But, although absolute Truth is not attainable by man, although there cannot be a science of Being, there can be a science of Appearances. The Phenomena, they admit, are true as Phenomena. What we have to do is therefore to observe and classify Phenomena; to trace in them the resemblances of coexistence and succession, to trace the connections of cause and effect; and, having done this, we shall have founded a Science of Appearances adequate to our wants.

But the age in which the Sceptics lived was not ripe for such a conception: accordingly, having proved the impossibility of a science of Being, they supposed that they had established the impossibility of all Science, and had destroyed all grounds of certitude. It is worthy of remark that modern Sceptics have added nothing which is not implied in the principles of the Pyrrhonists. The arguments by which Hume thought he destroyed all the grounds of certitude are differently stated from those of Pyrrho, but not differently founded; and they may be answered in the same way.

The Sceptics had only a negative doctrine; consequently, only a negative influence. They corrected the tendency of the mind towards accepting its conclusions as adequate expressions of the facts; they served to moderate the impetuosity of the speculative spirit; they showed that the pretended Philosophy of the day was not so firmly fixed as its professors supposed. It is curious, indeed, to have witnessed the gigantic efforts of a Socrates, a Plato, and an

Aristotle, towards the reconstruction of Philosophy, which the Sophists had brought to ruins—a reconstruction, too, on different ground—and then to witness the hand of the iconoclast smiting down that image, to witness the pitiless logic of the Sceptic undermining that laboriously-constructed edifice, leaving nothing in its place but another heap of ruins, like that from which the edifice was built; for, not only did the Sceptics refute the notion that a knowledge of Appearances could ever become a knowledge of Existence, not only did they exhibit the fallacious nature of sensation, and the want of certitude in the affirmations of Reason, they also attacked and destroyed the main positions of that Method which was to supply the ground of certitude; they attacked Induction and Definitions.

Of Induction, Sextus, in one brief, pregnant chapter, writes thus:—‘Induction is the conclusion of the Universal from individual things. But this Induction can only be correct in as far as all the individual things agree with the Universal. This universality must therefore be verified before the Induction can be made: a single case to the contrary would destroy the truth of the Induction.’*

We will illustrate this by an example. The whiteness of swans shall be the Induction. Swans are said to be white because all the individual swans we may have seen are white. Here the Universal (whiteness) seems induced from the particulars; and it is true in as far as all particular swans are white. But there are a few black swans; one of these particular black swans is sufficient to destroy the former Induction. If, therefore, says Sextus, you are not able to verify the agreement of the universal with every particular, *i.e.* if you are not able to prove that there is no swan not black, you are unable to draw a certain and accurate Induction. That you cannot make this verification is obvious.

In the next chapter Sextus examines Definitions. He pronounces them perfectly useless. If we know the thing

* *Pyrrhon. Hypot.* vol. ii, c. xv. p. 94. The edition I use is the Paris folio of 1621, the first of the Greek text.

we define, we do not comprehend it because of the definition, but we impose on it the definition because we know it; and if we are ignorant of the thing we would define, it is impossible to define it.

Although the Sceptics destroyed the dogmatism of their predecessors, they did not substitute any dogmatism of their own in its place. The nature of their scepticism is happily characterised by Sextus in his comparison of them with Democritus and Protagoras. Democritus had insisted on the uncertainty of sense-knowledge; but he concluded therefrom that objects had no qualities at all resembling those known to us through sensation. The Sceptics contented themselves with pointing out the uncertainty, but did not pronounce decisively whether the qualities existed objectively or not.

Protagoras also insisted on the uncertainty, and declared man to be the measure of truth. He supposed that there was a constant relation between the transformations of matter and those of sensation; but these suppositions he affirmed dogmatically; to the Sceptic they were uncertain.

This general incertitude often betrayed the Sceptics into ludicrous dilemmas, of which many specimens have been preserved. Thus they said, 'We assert nothing—no, not even that we assert nothing.' But if the reader wishes to see this distinction between a thing *seeming* and a thing *being*, ridiculed with a truly comic gusto, he should turn to Molière's *Mariage forcé*, act i. sc. 8. Such follies form no portion of our subject, and we leave them with some pleasure to direct our attention to more worthy efforts of human ingenuity.

CHAPTER II.

THE EPICUREANS.

§ I. EPICURUS.

THE Epicureans are condemned in their names. We before noticed how the meaning attached to the name of Sophist inadvertently gives a bias to every judgment of the School, and renders it extremely difficult to conceive the members of that School otherwise than as shameless rogues. Equally difficult is it to shake off the influence of association with respect to the Epicureans ; although historians are now pretty well agreed in believing Epicurus to have been a man of pure and virtuous life, and one whose doctrines were moderate and really inculcating abstemiousness.

Epicurus was born Ol. 109 (B.C. 342), at Samos, according to some ; at Gargettus, in the vicinity of Athens, according to others. His parents were poor, his father a teacher of grammar. At a very early age, he tells us, his philosophical career began : so early as his thirteenth year. But we must not misunderstand this statement. He dates his career from those first questionings which occupy and perplex most young minds, especially those of any superior capacity. He doubtless refers to that period when, boy-like, he puzzled his teacher with a question beyond that teacher's power. Hearing the verse of Hesiod wherein all things are said to arise from Chaos, Epicurus asked, 'And whence came Chaos ?'

'Whence came Chaos ?' Is not this the sort of question to occupy the active mind of a boy ? Is it not by such questions that we are all led into philosophy ? To philosophy

he was referred for an explanation. The writings of Democritus fell in his way, and were eagerly studied; the writings of others followed; and, his vocation being fixed, he sought instruction from many masters. But from all these masters he could gain no solid convictions. They gave him hints; and working upon the materials they furnished, he produced a system of his own, by which we presume he justified his claim to being self-taught.

His early years were agitated and unsettled. He visited Athens at eighteen, but remained there only one year. He then passed to Colophon, Mitylene, and Lampsacus. He returned to Athens in his six-and-thirtieth year, and there opened a school, over which he presided till his death, Ol. 127 (B.C. 272).

The place he chose for his school was the famous Garden, a spot pleasantly typical of his doctrine. The Platonists had their Academic Grove; the Aristotelians walked along the Lyceum; the Cynics growled in the Cynosarges; the Stoics occupied the Porch; and the Epicureans had their Garden.

Here, in the tranquil Garden, in the society of his friends, he passed a peaceful life of speculation and enjoyment. The friendship which existed amongst them is well known. In a time of general scarcity and famine they contributed to each other's support, showing that the Pythagorean notion of community of goods was unnecessary amongst friends, who could confide in each other. At the entrance of the Garden they placed this inscription: 'The hospitable keeper of this mansion, where you will find pleasure the highest good, will present you liberally with barley-cakes and water fresh from the spring. The gardens will not provoke your appetite by artificial dainties, but satisfy it with natural supplies. Will you not be well entertained?'

The Garden has often been called a sty: and the name of Epicurean has become the designation of a sensualist. But, in spite of his numerous assailants, the character of Epicurus has been rescued from contempt, both by ancient and by modern critics. Diogenes Laertius, who gives some of the

accusations in detail, easily answers them by an appeal to facts; and modern writers have been at no loss to discover the motive of the ancient calumnies, which mostly proceeded from the Stoics. A doctrine like that of Epicurus would, at all times, lend itself to gross misrepresentation; but in an epoch like that in which it appeared, and contrasted with a doctrine so fiercely opposed to it as the doctrine of the Stoics, we cannot wonder if the bitterness of opposition translated itself into calumny. It is one of the commonest results of speculative differences to make us attribute to our opponent's opinions the consequences which *we* deduce from them, as if they were indubitably the consequences he deduces for himself. Our opinions are conducive to sound morality: of *that* we are convinced; and being so convinced, it is natural for us to believe that contrary opinions must be immoral. Our opponent holds contrary, *ergo* immoral opinions; and we proclaim his immorality as an unquestionable fact. In this, however, there is a slight forgetfulness, namely, that our opponent occupies exactly similar ground, and what we think of him, he thinks of us.

The Stoics had an ineffable contempt for the weakness and effeminacy of the Epicureans. The Epicureans had an ineffable contempt for the spasmodic rigidity and unnatural exaggeration of the Stoics. They libelled each other; but the libels against the Epicureans have met with more general credit than those against the Stoics, from the more imposing character of the latter, both in their actions and doctrines.

Epicurus is said to have been the most voluminous of all Greek Philosophers, except Chrysippus; and although none of these works are extant, yet so many fragments are preserved here and there, and there is such ample testimony as to his opinions, that there are few writers of whose doctrine we can speak with greater certainty; the more so as it does not in itself present any difficulties of comprehension.

Nothing can be more unlike Plato and Aristotle than Epicurus; and this difference may be characterised at the outset by their fundamental difference in the conception of

Philosophy, which Epicurus regarded as the Art of Life, and not the Art of Truth. Philosophy, he said, was the power (*ἐνέργεια*) by which Reason conducted man to happiness. The investigations of Philosophy he despised: they were not only uncertain, but contributed nothing towards happiness; and of course Logic, the instrument of Philosophy, found no favour in his sight. His system was, therefore, only another form of Scepticism, consequent on his dissatisfaction with previous systems. Socrates had taught men to regard their own nature as the great object of investigation; but man does not interrogate his own nature out of simple curiosity, or for simple erudition: he studies his nature in order that he may improve it; he learns the extent of his capacities in order that he may properly direct them. The aim, therefore, of all such inquiries must be Happiness. And what constitutes Happiness? Upon this point systems differ: all profess to teach the road to Happiness, and all point out divergent roads. There can be little dispute as to what is Happiness, but infinite disputes as to the way of securing it.* In the Cyrenaic and Cynic Schools we saw this question leading to very opposite results; and the battle we are now to see renewed on similar ground between the Epicureans and the Stoics.

Epicurus, like Aristippus, declared that Pleasure constituted Happiness; all animals instinctively pursue it, and as instinctively avoid Pain. Man should do deliberately that which animals do instinctively. Every Pleasure is in itself good; but, in comparison with another, it may become an evil. The Philosopher differs from the common man in this: That while they both seek Pleasure, the former knows how to forego certain enjoyments which will cause pain and vexation hereafter; whereas the common man seeks only the immediate enjoyment. The Philosopher's art enables him to

* At a meeting of Socialists in London to discuss in a friendly way the means of reforming the world, M. Pierre Leroux rose and addressed his brethren thus: '*Nous voulons arriver au Paradis, n'est-ce pas? n'est-ce pas? Eh bien! il ne s'agit que d'y arriver! Voilà!*'

foresee what will be the result of his acts : and, so foreseeing, he will not only avoid those enjoyments which occasion grief, but know how to endure those pains from which surpassing pleasure will result.

True happiness, then, is not the enjoyment of the moment, but the enjoyment of the whole life. We must not seek to intensify, but to equalize : no debauchery to-day and satiety to-morrow, but equable enjoyment all the year round. No life can be pleasant except a virtuous life ; and the pleasures of the body, although not to be despised, are insignificant when compared with those of the soul. The former are but momentary ; the latter embrace both the past and future. Hence the golden rule of Temperance. Epicurus not only insisted on the necessity of moderation for continued enjoyment, he also slighted, and somewhat scorned, all exquisite indulgences. He fed moderately and plainly. Without interdicting luxuries, he saw that Pleasure was purer and more enduring if luxuries were dispensed with. This is the ground upon which Cynics and Stoics built their own exaggerated systems. They also saw that simplicity was preferable to luxury ; but they pushed their notion too far. Contentedness with a little, Epicurus regarded as a great good ; and he said, wealth consisted not in having great possessions, but in having small wants. He did not limit man to the fewest possible enjoyments : on the contrary, he wished him in all ways to multiply them ; but he wished him to be able to live upon little, both as a preventive against ill-fortune, and as an enhancement of rare enjoyments. The man who lives plainly has no fear of poverty, and is better able to enjoy exquisite pleasures.

Virtue rests upon Free Will and Reason, which are inseparable : since, without Free Will our Reason would be passive, and without Reason our Free Will would be blind. Everything, therefore, in human actions which is virtuous or vicious depends on man's *knowing* and *willing*. Philosophical education consists in accustoming the Mind to judge accurately, and the Will to choose manfully.

From this slight outline of his Ethical doctrine may be seen how readily it furnished arguments both to assailants and to defenders. We may also notice its vagueness and elasticity, which would enable many minds to adapt it to their virtues or to their vices. The luxurious would see in it only an exhortation to their own vices; the temperate would see in it a scientific exposition of temperance.

Epicureanism, in leading man to a correct appreciation of the moral end of his existence, in showing him how to be truly happy, has to combat with many obstructions which hide from him the real road of life. These obstructions are his illusions, his prejudices, his errors, his ignorance. This ignorance is of two kinds: first, ignorance of the laws of the external world, which creates absurd superstitions, and troubles the soul with false fears and false hopes; hence the necessity of some knowledge of Physics. The second kind of ignorance is that of the nature of man; hence the necessity of the Epicurean Logic called *Canonic*, which is a collection of rules respecting human reason and its application.

The Epicurean psychology and physics were derived from the Democritean. The atoms of which the universe is formed are supposed to be constantly throwing off some of their parts, *ἀπορροαί*: and these, in contact with the senses, produce sensation, *αἴσθησις*. But Epicurus did not maintain that these *ἀπορροαί* were *images* of the atoms; he believed them to have a certain resemblance to their atoms, but was unable to point out where, and in how far this resemblance exists. Every sensation must be true as a sensation; and, as such, it can neither be proved nor contradicted; it is *ἄλογος*. The sensations of the insane and the dreaming are also true; and although there is a difference between their sensations and those of sane and waking men, yet Epicurus confessed himself unable to determine in what the difference consists. Sensations however do not alone constitute knowledge; man has also the faculty of conception, *πρόληψις*, which arises from the repeated iteration of sensation: it is recollection of various sensations; or, as Aristotle would say, the general

idea gathered from particular sensations. It is from these conceptions that the general ideas are formed, and it is in these general ideas that error resides. A sensation may be considered either in relation to its object, or in relation to him who experiences it; in the latter case it is agreeable or disagreeable, and renders the sentiments, *τὰ πάθη*, the basis of all morality.

With such a basis, we may readily anticipate the nature of the superstructure. If agreeable and disagreeable sensations are the origin of all moral phenomena, there can be no other moral rule than to seek the agreeable and to avoid the disagreeable; and whatever is pleasant becomes the great object of existence.

The Physics of Epicurus are so similar to the Physics of Democritus that we need not occupy our space with them.

On reviewing the whole doctrine of Epicurus, we find in it that scepticism which the imperfect Philosophy of the day necessarily brought to many minds, in many different shapes; and the consequence of that scepticism was the effort to find a refuge in Morals, and the attempt to construct Ethics on a philosophic basis. The attempt failed because the basis was not broad enough; but the attempt itself is worthy of notice, as characteristic of the whole Socratic movement; for, although the Socratic Method was an attempt at reconstructing Philosophy, yet that reconstruction itself was only attempted with a view to morals. Socrates was the first to bring Philosophy down from the clouds; he was the first to make it the basis of Morality, and in one shape or other all his followers and all the schools that issued from them, kept this view present to their minds. The Epicureans are therefore to be regarded as men who ventured on a solution of the great problem, and failed because they only saw a part of the truth.

CHAPTER III.

THE STOICS.

§ I. ZENO.

THE Stoics were a large sect, and of its members so many have been celebrated, that a separate work would be needed to chronicle them all. From Zeno, the founder, down to Brutus and Marcus Antoninus, the sect embraces many Greek and Roman worthies, and not a few solemn pretenders. Some of these we would willingly introduce; but we are forced to confine ourselves to one type; and we select Zeno.

He was born at Citium, a small city in the island of Cyprus, of Phœnician origin, but inhabited by Greeks. The date of his birth is uncertain. His father was a merchant, in which trade he himself engaged, until his father, after a voyage to Athens, brought home some works of Socratic philosophers; these Zeno studied with eagerness and rapture and determined his vocation.

When about thirty, he undertook a voyage both of interest and pleasure, to Athens, the great mart both for trade and philosophy. Shipwrecked on the coast, he lost the whole of his valuable cargo of Phœnician purple; and, thus reduced to poverty, he willingly embraced the doctrine of the Cynics, whose ostentatious display of poverty had captivated many minds.

There is an anecdote of his having one day read Xenophon's *Memorabilia*, in a bookseller's shop, with such delight that he asked where such men were to be met with. At that moment Crates the Cynic passed by: the bookseller pointed him out to Zeno, and bade him follow Crates. He did so; and he

became a disciple. But he could not long remain a disciple. The gross manner of the Cynics, so far removed from true simplicity, and their speculative incapacity, soon caused him to seek a master elsewhere. Stilpo, of Megara, became his next instructor; and from him he learned the art of disputation, which he subsequently practised with such success.

But the Megaric doctrine was too meagre for him. He was glad to learn from Stilpo; but there were things which Stilpo could not teach. He turned, therefore, to the expositors of Plato: Xenocrates and Polemo. In the philosophy of Plato there is, as before remarked, a germ of Stoicism; but there is much also that contradicts Stoicism, and so, we presume, Zeno grew discontented with that also.

After twenty years of laborious study in these various schools, he opened one for himself, wherein to teach the result of all these inquiries. The spot chosen was the Stoa, or Porch, which had once been the resort of the Poets, and was decorated with the pictures of Polygnotus. From this Stoa the school derived its name.

As a man, Zeno appears deserving of the highest respect. Although sharing the doctrines of the Cynics, he did not share their grossness, their insolence, or their affectation. In person he was tall and slender; and, although of a weakly constitution, he lived to a great age, being rigidly abstemious, feeding mainly upon figs, bread, and honey. His brow was furrowed with thought; and this gave a tinge of severity to his aspect, which accorded with the austerity of his doctrines. So honoured and respected was he by the Athenians, that they entrusted to him the keys of the citadel; and when he died they erected to his memory a statue of brass. His death is thus recorded:—In his ninety-eighth year, as he was stepping out of his school, he fell and broke his finger. He was so affected at the consciousness of his infirmity that, striking the earth, he exclaimed, ‘Why am I thus importuned? Earth, I obey thy summons!’ He went home and strangled himself.

There are periods when society seems fast dissolving; when ancient creeds have lost their majesty, and new creeds want disciples: when the onlooker sees the fabric tottering, beneath which his fellow-men are crowded either in sullen despair or in blaspheming levity, and, seeing this, he feels that there is safety still possible, if men will but be bold; he raises a voice of warning, and a voice of exhortation; he bids them behold their peril and tremble, behold their salvation and resolve. He preaches to them a doctrine they had been unused to hear, or, hearing it, unused to heed; and by the mere force of his own intense conviction he gathers round him some believers who are saved. If the social anarchy be not too widely spread, he saves his country by directing its energies in a new channel; if the country's doom is sealed, he makes a gallant effort, though a vain one, and 'leaves a spotless name to after-times.'

Such a man was Zeno. Greece was fallen; but hope still remained. A wide-spread disease was fast eating out the vigour of its life: Scepticism, Indifference, Sensuality, Epicurean softness, were only counteracted by the aspiring but vague works of Plato, or the vast but abstruse system of Aristotle. Greek civilisation was fast falling to decay. A little time and Rome, the she-wolf's nursling, would usurp the place which Greece had once so proudly held—the place of vanguard of European civilisation. Rome, the mighty, would take from the feeble hands of Greece the trust she was no longer worthy to hold. There was a presentiment of Rome in Zeno's breast. In him the manly energy and stern simplicity which were to conquer the world; in him the deep reverence for moral worth, which was the glory of Rome, before, intoxicated with success, she sought to ape the literary and philosophical glory of old Hellas. Zeno the Stoic had a Roman spirit; and this is the reason why so many noble Romans became his disciples: he had deciphered the wants of their spiritual nature.

Alarmed at the scepticism which seemed inevitably follow-

ing speculations of a metaphysical kind, Zeno, like Epicurus, fixed his thoughts principally upon Morals. His philosophy boasted of being eminently practical, and connected with the daily practices of life. But, for this purpose, the philosopher must not regard pleasure so much as Virtue : nor does Virtue consist in a life of contemplation and speculation, but in a life of activity ; for what is Virtue?—Virtue is manhood. And what are the attributes of man? Are they not obviously the attributes of an *active* as well as of a *speculative* being? and can that be Virtue which excludes or neglects man's activity? Man, O Plato, Man, O Aristotle, was not made for speculation only ; wisdom is not his only pursuit. Man, O Epicurus, was not made for enjoyment only ; he was made also to *do* somewhat, and to *be* somewhat. Philosophy?—It is a great thing ; but it is not all. Pleasure?—It is a slight thing ; and were it greater, could not embrace man's entire activity.

The aim, then, of man's existence is neither to be wise nor to enjoy, but to be virtuous—to realise his manhood. To this aim, Philosophy is a means, and Pleasure may also be one ; but they are both subordinate. Before we can be taught to lead a virtuous life, we must be taught what virtue is. Zeno thought, with Socrates, that Virtue was the knowledge of Good, and that Vice was nothing but error. If to *know* the good were tantamount to the pursuit and practice of it, then was the teacher's task easily defined : he had to explain the nature of human knowledge, and to explain the relations of man to the universe.

Thus, as with Socrates, does Morality find itself inseparably connected with Philosophy ; and more especially with psychology. A brief outline of this psychology becomes therefore necessary as an introduction to the Stoical Morality.

Zeno rejected the Platonic theory of knowledge, and accepted, though with some modifications, the Aristotelian theory. 'Reminiscence' and 'Ideas' were to him mere words. Ideas he regarded as the universal notions formed by the mind from a comparison of particulars. Sense furnished

all the materials of knowledge; Reason was the plastic instrument whereby these materials were fashioned. But those who maintain that Sense furnishes us the materials of knowledge are hampered with this difficulty: By what process does Sense perceive? What relation is there between Sense and the sensible Thing? What proof have we of those sensations being conformable with the Things? This difficulty is a serious one, and early occupied speculators. Indeed, this question is vital to philosophy; upon its solution depends to a great extent the solution of all other questions. Let us state it more clearly in an illustration.

At the distance of fifty yards you descry a tower: it is round. What do you mean by saying, It is round? You mean that the impression made upon you is an impression similar to that made by some other objects, such as trees which you, and all men, call round. Now, on the supposition that you never approached nearer that tower, you would always believe it to *be* round, because it *appeared* to be so. But you approach it, and you *then* find that the tower is square, and not round; you begin to examine into this difference. It appeared to be round at that distance; and yet you say it really *is* square. A little knowledge of optics seems to explain the difference; but does not. At fifty yards, you say, it appears to be round; but it really is square. At fifty yards it appears to be round, and at one yard it appears to be square: it *is* neither: both round and square are conceptions of the mind, not attributes of things: they have a subjective, not an objective existence.

Thus far the ancient sceptics penetrated; but, seeing herein an utter destruction of all certainty in sense-knowledge, and compelled to admit that Sense was the only source of knowledge, they declared all knowledge a deceit. The discovery of the real issue whence to escape this dilemma—the recognition of the uncertainty of sense-knowledge, and the reconciliation of that theory with the natural wants of the speculative mind by the twofold admission of the relativity of all knowledge and of relative certainty—reconciling

scepticism with belief, and both with reason, was the work of after-times.

Those who believed that the senses gave true reports of the Things which affected them, were driven to invent some hypothesis explanatory of the relation subsisting between the Object and the Subject, the Thing and the Sense. We have seen how *eidola*, airy images affluent from Things, were invented to establish a direct connection between the Subject and the Object. Zeno, acutely enough, saw that an image detaching itself in an airy form from the Object, could only represent the superficies of that Object, even if it represented it correctly. In this way the hypothesis of *eidola* was shown to be no more than an hypothesis to explain Appearances; whereas the real question is not, How do we perceive Appearances? but how do we perceive Objects? If we only perceive their superficies, our knowledge is only superficial and we fall into the hands of the Sceptics.

Zeno saw the extent of the difficulty, and tried to obviate it. But his hypothesis, though more comprehensive, was equally feeble in its foundation. He assumed that Sense *could* penetrate beneath Appearance, and perceive Substance itself.

As considerable confusion exists on this point, we shall confine ourselves to the testimony of Sextus Empiricus, the most satisfactory of all. In his book directed against the Logicians, he tells us, ‘the Stoics held that there was one criterion of truth for man, and it was what they called the Cataleptic Phantasm (τὴν καταληπτικὴν φαντασίαν, i.e. the Sensuous Apprehension). We must first understand what they meant by the Phantasm or Appearance. It was, they said, an impression on the mind (τύπωσις ἐν ψυχῇ). But from this point commence their differences; for Cleanthus understood, by this impression, an impression similar to that made by the signet ring upon wax, τοῦ κηροῦ τύπωσιν. Chrysippus thought this absurd; for, said he, seeing that thought conceives many objects at the same time, the soul must upon that hypothesis receive many impressions of figures. He thought that Zeno meant by *impression* nothing more than a *modification*

(ἐκτετακέναι): likening the soul to the air, which when many voices sound simultaneously, receives simultaneously the various alterations, but without confounding them. Thus the Soul unites several perceptions which correspond with their several objects.'

This is extremely ingenious, and the indication of Sensation as a modification of the Soul opens a shaft deep down into the dark region of psychology. But, if it lets in some of the light of day, it also brings into notice a new obstacle. This soul, which is modified, does it not also in its turn exercise an influence? If wine be poured into water, it modifies the water; but the water also modifies the wine. There can be no action without reaction. If a stone is presented to my sight, it modifies my soul; but does the influence of the stone remain unmodified?—No; it receives from me certain attributes, certain form, colour, taste, weight, &c.; these my soul bestows on it; in itself it does not possess them.

Thus is doubt again spread over the whole question. The soul modifying the object in sensation, can it rely upon the truth of the sensation thus produced? Has not the wine become watery, no less than the water vinous? These consequences, however, Zeno did not foresee. He was intent upon proving that the soul really apprehended objects, not as *eidola*, not as wax receives the impression of a seal, but in absolute truth. Let us continue to borrow from Sextus Empiricus.

The Phantasm, or Appearance, which causes that Modification of the Soul which we name Sensation, is also understood by the Stoics as we understand ideas; and in this general sense, they say that there were three kinds of Phantasms: those that were probable, those that were improbable, and those that were neither one nor the other. The first are those that cause a slight and equable motion in the soul: such as those which inform us that it is day. The second are those which contradict our reason: such as if one were to say during the day-time, 'Now the sun is

not above the earth;' or during the night-time, 'Now it is day.' The third are those, the truth of which it is impossible to verify: such as this, 'The number of the stars is even;' or, 'the number is odd.'

Phantasms, when probable, are true or false, or both true and false at the same time, or neither true nor false. They are true when they can be truly affirmed of anything; false if they are wrongly affirmed, such as when one believes an oar dipped in the water to be broken, because it appears so. When Orestes, in his madness, mistook Electra for a Fury, he had a Phantasm both true and false: true, inasmuch as he saw something, viz. Electra; false, inasmuch as Electra was not a Fury.

Of true Phantasms, some are cataleptic (apprehensive), and others non-cataleptic. The latter are such as arise from disease or perturbation of the mind: as for instance the innumerable Phantasms produced in frenzy and hypochondria. The cataleptic Phantasm is that which is impressed by an object which exists, which is a copy of that object, and can be produced by no other object. Perception is elsewhere said to be a sort of light, which manifests itself at the same time that it lights up the object from which it is derived.

Zeno distinctly saw the weakness of the theories proposed by others; he failed however in establishing any better theory in their place. Sextus Empiricus may well call the Stoical doctrine vague and undecided. How are we to distinguish the true from the false in appearances? Above all, how are we to learn whether an impression exactly coincides with the object? This is the main problem, and Zeno pretends to solve it by a circular argument. Thus: given the problem, how are we to distinguish the true impressions from the false impressions? the solution offered is, by ascertaining which of the impressions coincide with the real objects: in other words, by distinguishing the true impressions from the false.

Having a perception of an object is not knowledge: for

knowledge, it is necessary that reason should assent. Perception comes from without; assent from within: it is the free exercise of man's reason. Science is composed of perceptions so solidly established that no augmentation can shake them. Perceptions not thus established only constitute Opinion.

This is making short work with difficulties, it must be confessed; but the Stoics were eager to oppose something against the Scepticism which characterised the age; and, in their eagerness to build, they did not sufficiently secure their foundations. Universal doubt they felt to be impossible. Man must occasionally assent, and that too in an absolute manner. There are perceptions which carry with them irresistible conviction. There would be no possibility of action unless there were some certain truth. Where then is conviction to stop? That all our perceptions are not correct, every one is willing to admit. But which are exact, and which are inexact? What *criterion* have we? The criterion we possess is Evidence. 'Nothing can be clearer than evidence,' they said; 'and, being so clear, it needs no definition.' This was precisely what it *did* want; but the Stoics could not give it.

In truth, the Stoics, combating the Scepticism of their age, were reduced to the same strait as Reid, Beattie, and Hutcheson, combating the Scepticism of Hume: reduced to give up Philosophy, and to find refuge in Common-Sense. The battle fought by the Stoics is very analogous to the battle fought by the Scotch philosophers, in the ground occupied, in the instruments employed, in the enemy attacked, and the object to be gained. They both fought for Morality, which they thought endangered.

We shall subsequently have to consider the Common-Sense theory: enough if we now call attention to the curious *ignoratio elenchi*—the curious misconception of the real force of the enemy, and the utter helplessness of their own position, which the Common-Sense philosophers displayed. The Sceptics had made an irresistible onslaught

upon the two fortresses of Perception and Reason. They showed Perception to be based upon Appearance; and Appearance could not be Certainty. They showed also that Reason was unable to distinguish between Appearance and Certainty, because, in the first place, it had nothing but Phenomena (Appearances) to build upon; and, in the second place, because there is no criterion to apply to Reason itself. Having gained this victory, they proclaim Philosophy no longer existent. Whereupon the Stoics valorously rise, and, taking their stand upon Common-Sense, believe they rout the forces of the Sceptics; believe they retake the lost fortresses by declaring that perceptions are true as well as false, and that you may distinguish the true from the false, by—distinguishing them: and that Reason has its criterion in Evidence, which requires no criterion, it is so clear. This seems pretty much the same as if the French were to invade Great Britain; possess themselves of London, Edinburgh, and Dublin, declare England the subject of France, and patriots were then to declare that the French were to be driven home again by a party of volunteers taking their stand upon Hampstead Heath, displaying the banners of England, and with loud alarums proclaiming the invaders defeated.

But it is time to consider the ethical doctrines of the Stoics; and to do this effectually we must glance at their conception of the Deity. There are two elements in Nature. The first is *ἕλη πρώτη*, or primordial matter; the passive element from which things are formed. The second is the active element, which forms things out of matter: Reason, Destiny (*εἰμαρμένη*), God. The divine Reason operating upon matter bestows upon it the laws which govern it, laws which the Stoics called *λόγοι σπερματικοί*, or productive causes. God is the Reason of the world.

With this speculative doctrine it is easy to connect their practical doctrine. Their ethics are easily to be deduced from their theology. If Reason is the great creative law, to live conformably with Reason must be the practical moral

law. If the universe be subject to a general law, every part of that universe must also be duly subordinate to it. The consequence is clear: there is but one formula for Morals, and that is, 'Live harmoniously with Nature,' *ὁμολογομένως τῇ φύσει ζῆν*.

This is easily said. An anxious disciple might, however, desire greater precision, and ask, Is it universal nature, or is it the particular nature of man, that I am to live in unison with? Cleanthes taught the former; Chrysippus the latter; or, we should rather say, taught that both individual and universal nature should be understood by the formula. And this appears to have been the sense in which it was usually interpreted.

The distinctive tendency of the formula cannot be mistaken: it is to reduce everything to Reason, which, as it has supremacy in creation, must also have supremacy in man. This is also the Platonic conception. It makes Logic the rule of life, and assumes that there is nothing in man's mind which cannot be reduced within the limits of Logic; assumes that man is all intellect. It follows, that everything which interferes with a purely intellectual existence is to be eliminated as dangerous. The pleasures and the pains of the body are to be despised: only the pleasures and the pains of the intellect are worthy to occupy man. By his passions he is made a slave; by his intellect he is free. His senses are passive; his intellect is active. It is his duty therefore to surmount and despise his passions and his senses, that he may be free, active, virtuous.

We have here the doctrine of the Cynics, somewhat purified, but fundamentally the same; we have here also the anticipation of Rome; the forethought of that which was subsequently realised in act. Rome was the fit theatre of Stoicism, because Rome was peopled with soldiers: these soldiers had their contempt of death formed in perpetual campaigns. How little the Romans regarded the life of man their history shows. The gladiatorial combats, brutal and relentless, must have hardened the minds of all specta-

tors; and there were no softening influences to counteract them. How different the Greeks! They did not pretend to despise this beautiful life; they did not affect to be above humanity. Life was precious, and they treasured it; treasured it not with petty fear, but with noble ingenuousness. They loved life, and wept on quitting it; and they wept without shame. They loved life, and they said so. When the time came for them to risk it, or to give it for their country, or their honour,—when something they prized higher was to be gained by the sacrifice,—then they died unflinchingly. The tears shed by Achilles and Ulysses did not unman them: these heroes fought terribly, as they loved tenderly. Philoctetes, in agony, howls like a wild beast, because he feels pain, and feels no shame in expressing it. But these shrieks have not softened him: he is still the same stern, implacable Philoctetes.

The Stoics, in their dread of becoming effeminate, became marble. They despised pain; they despised death. To be above pain was thought manly. They did not see that, in this respect, instead of being above humanity, they sank below it. If it is a condition of our human organisation to be susceptible of pain, it is only affectation to conceal the expression of that pain. Could silence stifle pain, it were well; but to stifle the cry, is not to stifle the feeling; and to have a feeling, yet affect not to have it, is pitiful. The savage soon learns that Philosophy; the civilised man is superior to it. You receive a blow, and you do not wince? so much of heroism is displayed by a stone. You are face to face with Death, and you have no regrets? then you are unworthy of life. Real heroism feels the pain it conquers, and loves the life it surrenders in a noble cause.

As a reaction against effeminacy, Stoicism may be applauded; as a doctrine, it is one-sided. It ends in apathy and egoism. Apathy, indeed, was considered by the Stoics as the highest condition of Humanity; whereas, in truth, it is the lowest.

CHAPTER IV.

THE NEW ACADEMY.

§ I. ARCESILAUS AND CARNEADES.

THE New Academy would solicit our attention, were it only for the celebrity bestowed on it by Cicero and Horace; but it has other and higher points of interest than those of literary curiosity. The combat of which it was the theatre was, and is, of singular importance. The questions connected with it are those vital questions respecting the origin and certitude of human knowledge, which so long have occupied the ingenuity of thinkers; and the consequences which flow from either solution of the problem are of the utmost importance.

The Stoics endeavoured to establish the certitude of human knowledge, in order that they might establish the truth of moral principles. They attacked the doctrines of the Sceptics, and believed they triumphed by bringing forward their own doctrine of Common-Sense. But the New Academicians had other arguments to offer. They too were Sceptics, although their scepticism differed from that of the Pyrrhonists. The nature of this difference Sextus Empiricus has noted. ‘Many persons,’ says he, ‘confound the Philosophy of the Academy with that of the Sceptics. But although the disciples of the New Academy declare that all things are incomprehensible, yet they are distinguished from the Pyrrhonists in this very dogmatism; they affirm that all things are incomprehensible—the Sceptics do not affirm even that. Moreover, the Sceptics consider all perceptions perfectly equal as to the faithfulness of their testimony; the

Academicians distinguish between probable and improbable perceptions: the first they class under various heads. There are some, they say, which are merely probable, others which are also confirmed by reflection, others which are subject to no doubt. Assent is of two kinds: simple assent which the mind yields without repugnance as without desire, such as that of a child following its master; and the assent which follows upon conviction and reflection. The Sceptics admitted the former kind; the Academicians the latter.'

These differences are of no great moment; but in the history of sects we find every variation invested with its degree of importance; and we can understand the pertinacity with which the Academicians distinguished themselves from the Sceptics, even on such slight grounds as the above.

In treating of the Academicians we are forced to follow the plan pursued with the Sceptics, namely to consider the doctrines of the whole sect, rather than to particularise the share of each individual member. The Middle Academy and the New Academy we thus unite in one; although the ancients drew a distinction between them, it is difficult for moderns to do so. Arcesilaus and Carneades, therefore, shall be our types.

Arcesilaus was born at Pitane in the 116th Olympiad (B.C. 316). He was early taught mathematics and rhetoric, became the pupil of Theophrastus, afterwards of Aristotle, and finally of Polemo the Platonist. In this last school he was contemporary with Zeno, and probably there began that antagonism which was so remarkable in their subsequent career. On the death of Crates, Arcesilaus filled the Academic chair, and filled it with great ability and success. His fascinating manners won him general regard. He was learned and sweet-tempered, and generous to a fault. Visiting a sick friend, who, he saw, was suffering from privation, he slipped, unobserved, a purse of gold underneath the sick man's pillow. When the attendant discovered it, the sick man said with a smile, 'This is one of Arcesilaus's generous frauds.'

He was of a somewhat luxurious temper, but he lived till the age of seventy-five, when he killed himself by hard drinking.

Carneades, the most illustrious of the Academicians, was born at Cyrene, in Africa, Ol. 141, 4 (B.C. 213). He was a pupil of Diogenes the Stoic, who taught him the subtleties of disputation. This made him sometimes exclaim in the course of a debate: 'If I have reasoned rightly, you are wrong; if not, O Diogenes, return me the *mina* I paid you for my lessons.' On leaving Diogenes he became the pupil of Hegesinus, who then held the Academic chair; by him he was instructed in the sceptical principles of the Academy, and on his death he succeeded to his chair. He also diligently studied the voluminous writings of Chrysippus. These were of great value to him, exercising his subtlety, and trying the temper of his own metal. He owed so much to this opponent that he used to say, 'Had there not been a Chrysippus, I should not be what I am.' There are two kinds of writers: those who directly instruct us in sound knowledge, and those who indirectly lead us to the truth by the very opposition they raise against their views. Next to exact knowledge, there is nothing so instructive as exact error: an error clearly stated, and presented in somewhat the same way as it at first presented itself to the mind which now upholds it, enables us to see not only that it is an error, but by what illusion it deceived the upholder; it thus becomes fertile in results. It is better than direct instruction: better, because the learner's mind is called into full activity, and apprehends the truth for itself, instead of passively assenting to it.

Carneades was justified in his praise of Chrysippus. He felt how much he owed to his antagonist. He felt that to him he owed a clear conception of the Stoical error, and a clear conviction of the truth of the Academic doctrine; and owed also no inconsiderable portion of that readiness and subtlety which marked him out amongst his countrymen as a fitting Ambassador to be sent to Rome.

Carneades in Rome—Scepticism in the Stoic city—presents an interesting picture. The Romans crowded round him, fascinated by his subtlety and eloquence. Before Galba—before Cato the Censor—he harangued with marvellous unction in praise of Justice; and the hard brow of the grim Stoic softened; an approving smile played over those thin firm lips. But the next day the brilliant orator undertook to exhibit the uncertainty of all human knowledge; and, as a proof, he refuted all the arguments with which the day before he had supported Justice. He spoke against Justice as convincingly as he had spoken for it. The brow of Cato darkened again, and, with a keen instinct of the dangers of such ingenuity operating upon the Roman youth, he persuaded the Senate to send back the philosophers to their own country.

Carneades returned to Athens, and there renewed his contest with the Stoics. He taught with great applause, and lived to the advanced age of ninety.

That the Academicians should have gone over to scepticism is not strange: indeed, as we have said, scepticism was the inevitable result of the tendencies of speculation; and the only sect which did not accept it was forced to find refuge in Common-Sense: that is to say, was forced to find refuge in the abdication of Philosophy, which abdication was in itself a species of scepticism. But it may seem strange that the New Academy should issue from Plato; it may seem strange that Arcesilaus should be a continuer and a warm admirer of Plato. The ancients themselves, according to Sextus Empiricus, were divided amongst each other respecting Plato's real doctrine; some considering him a sceptic, others a dogmatist. We have already explained the cause of this difference of opinion, and have shown how very little consistency and precision there is in the opinions of Plato upon all subjects except Method. Scepticism, therefore, might very easily result from a study of his writings. But this is not all. Plato's attack upon the theories of his predecessors, which were grounded upon sense-knowledge, is

constant, triumphant. The dialogue of the *Theætetus*, which is devoted to the subject of Philosophy, is an exposition of the incapacity of sense to furnish materials for Philosophy. All that sense can furnish the materials for is Opinion, and Opinion, as he frequently declares, even when it is Right Opinion, never can be Philosophy. Plato, in short, destroyed all the old foundations upon which theories had been constructed. He cleared the ground before commencing his own work. By this means he obviated the attacks of the Sophists, and yet refused to sustain the onus of errors which his predecessors had accumulated. The Sophists saw the weakness of the old belief, and attacked it. Having reduced it to ruins, they declared themselves triumphant. Plato appeared, and admitted the fact of the old fortress being in ruins, and its deserving to be so ; but he denied that the city of 'Truth was taken. 'Expend,' said he, 'your wrath and skill in battering down such fortresses ; I will assist you ; for I too declare them useless. But the real fortress you have not yet approached ; it is situate on far higher ground.' Sense-knowledge and Opinion being thus set aside, the stronghold of Philosophy was the Ideal theory : in it Plato found refuge from the Sophists. Aristotle came and destroyed that theory. What then remained ? Scepticism.

Arcesilaus admitted, with Plato, the uncertainty of Opinion ; but he also admitted, with Aristotle, the incorrectness of the Ideal theory. He was thus reduced to scepticism. The arguments of Plato had quite destroyed the certitude of Opinion ; the arguments of Aristotle had quite destroyed the Ideal theory. And thus, by refusing to accept one argument of the Platonic doctrine, Arcesilaus could from Plato's works deduce his own theory of the Incomprehensibility of all things : the *acatalepsy*.

The doctrine of *acatalepsy* recalls to us the Stoical doctrine of catalepsy or Apprehension, to which it is the antithesis. The Cataleptic Phantasm was the True Perception, according to the Stoics ; according to the Academicians all Perceptions were *acataleptic*, *i. e.* bore no conformity to the

objects perceived; or, if they did bear any conformity thereto, it could never be known.

Arcesilaus saw the weak point of the Stoical argument. Zeno pretended that there was a criterion, which decided between Science and Opinion, which decided between true and false perceptions, and this was the assent which the mind gave to the truth of certain perceptions: in other words, Common-Sense was the criterion. 'But,' said Arcesilaus, 'what is the difference between the assent of a wise man and the assent of a madman?—There is no difference but in name.' He felt that the criterion of the Stoics was itself in need of a criterion.

Chrysippus the Stoic combated Arcesilaus, and was in turn combated by Carneades. The great question then pending was this:—

What Criterion is there of the truth of our knowledge?

The Criterion must reside in Reason, in Conception, or in Sensation. It cannot reside in Reason, because Reason itself is not independent of the other two: it operates upon the materials furnished by them, and is dependent upon them. Our knowledge is derived from the senses, and every object presented to the mind must consequently have been originally presented to the senses: on their accuracy Reason must rely.

Reason cannot therefore contain within itself the desired criterion. Nor can Conception; for the same arguments apply to it. Nor can the Criterion reside in Sense; because, as all admit, the senses are deceptive, and there is no perception which cannot be false? For what is Perception? Our Senses only inform us of the presence of an object in so far as they are affected by it. But what is this? Is it not *we* who are affected—*we* who are modified? Yes; and this modification reveals both itself and the object which causes it. Like light, which, in showing itself, shows also the objects upon which it is thrown; like light, also, it shows objects in *its own colours*. Perception is a peculiar modification of the soul. The whole problem now to solve is this:—

Does every modification of the soul exactly correspond with the external object which causes that modification?

This is a problem presented by the Academicians. They answered, but they did not solve it; they left to their adversaries the task of proving the correspondence between the object and subject.

In nowise does the Sensation correspond with the Object; in nowise does the modification correspond with the external cause, except in the relation of cause and effect. The early thinkers were well aware, that in order to attribute any certainty to sensuous knowledge, we must assume that the Senses transmit us copies of things. Democritus, who was the first to see the necessity of such an hypothesis, suggested that our Ideas were *Eidola*, or images of the objects, of an extremely airy texture, which were thrown off by the objects in the shape of effluvia, and entered the brain by the pores. Those who could not admit such an explanation substituted the hypothesis of Impressions. Ask any man, not versed in such inquiries, whether he believes his perceptions to be copies of objects,—whether he believes that the flower he sees before him exists quite independently of him, and of every other human being, and exists with the same attributes of shape, fragrance, taste, &c., his answer is sure to be in the affirmative. He will regard you as a madman if you doubt it. And yet so early as the epoch of which we are now sketching the history, thinking men had learned in some wise to see that our Perceptions were *not* copies of objects, but were simply modifications of our minds, caused by the objects. Once admit this, they said, and sensuous knowledge is for ever pronounced not only uncertain, but necessarily so. Can each modification be a *copy* of the cause which modifies? As well ask, Is the pain, occasioned by a burn, a copy of the fire? Is it at all like the fire? Does it at all express the essence of fire? Not in the least. It only expresses one relation in which we stand to the fire; one effect upon us which fire will produce. Nevertheless fire is an object, and a burn is a sensation. The way in which we perceive the existence of

the object (fire) is similar to that in which we perceive the existence of other objects: and that way is in the modifications they occasion; *i.e.* in the Sensations.

Let us take another instance. We say that we hear thunder: in other words, that we have a perception of the object called thunder. Our sensation really is of a sound, which the electrical phenomena we call thunder have caused in us, by setting the air vibrating and thus acting on the auditory nerve. Is our sensation any copy of the Phenomena? Does it in any degree express the nature of the Phenomena? No; it only expresses the effect produced in us by a certain vibration of the air.

In these cases most people will readily acquiesce; for, by a very natural confusion of ideas, whenever they speak of perceptions they mostly mean visual perceptions; because with sight the clearest knowledge is associated; because also the hypothesis of our perceptions being copies of Things is founded upon sight. The same persons who would willingly admit that pain was not a copy of the fire, nor of anything in the nature of fire, except in its effect on our nerves, would protest that the appearance of fire to the eye was the *real* appearance of the fire, all eyes apart, and quite independent of human vision. Yet if all sentient beings were at once swept from the face of the earth, the fire would have no attribute at all resembling pain; because pain is a modification, not of fire, but of a sentient being. In like manner, if all sentient beings were at once swept from the face of the earth, the fire would have no attributes at all resembling light and colour; because light and colour are modifications of the sentient being, caused by *something* external, but no more resembling its cause than the pain inflicted by an instrument resembles that instrument.

Pain and colour are modifications of the sentient being. The question at issue is, Can a modification of a sentient being be a copy of its cause? We may imagine that when we see an object our sensation is a copy of it, because we believe that the object paints itself upon the retina; and we

liken perception to a mirror, in which things are reflected. It is extremely difficult to divest ourselves of this prejudice; but we may be made aware of the fallacy if we attend to those perceptions which are not visual—to the perceptions of sound, fragrance, taste, or pain. These are clearly nothing but modifications of our sentient being, *caused* by external objects, but in nowise *resembling* them. We are all agreed that the heat is not in the fire, but in us; that sweetness is not in the sugar, but in us; that fragrance is but the particles which, impinging on the olfactory nerve, cause a sensation in us. In all beings similarly constituted these things would have similar effects, would cause pain, sweetness, and fragrance; but on all other beings the effects would be different. Fire would burn paper, but not pain it; sugar would mix with water, but not give it the sensation of sweetness.

Perception is nothing more than a state of the percipient; *i.e.* a state of consciousness. This state may be occasioned by some external cause, and may be as complex as the cause is complex, but it is still nothing more than a state of consciousness—an effect produced by an adequate cause. Of every change in our sensation we are conscious, and in time we learn to give definite names and forms to the causes of these changes. But in the fact of Consciousness there is nothing beyond Consciousness. In our perceptions we are conscious only of the changes which have taken place within us: we can never transcend the sphere of our own consciousness; we can never go out of ourselves, and become aware of the objects which caused those changes. All we can do is to identify certain external appearances with certain internal changes, *e.g.* to identify the appearance we name ‘fire’ with certain sensations we have known to follow our being placed near it. Turn the fact of Consciousness how we will, we can see nothing in it but the change of a sentient being operated by some external cause. Consciousness is no mirror of the world; it gives no faithful reflection of things as they are *per se*; it only gives a faithful report of its own modification as excited by external things.

The world, apart from our consciousness, *i.e.* the non-ego *quâ* non-ego—the world *per se*—is, in all likelihood, something utterly different from the world as we know it; for all we know of it is derived through our consciousness of what its effects are on *us*, and our consciousness is obviously only a state of ourselves, not a copy of external things.

It may be here asked, How do you infer that the world is different from what it appears to us?

The question is pertinent, and may be answered briefly. The world *per se* must be different from what it appears to us through consciousness, because to us it is only known in the relation of cause and effect. World is the cause; our consciousness the effect. But the same cause operating on some other organization would produce a very different effect. If all animals were blind, there would be no such thing as light (*i.e.* light as we know it), because light is a resultant of the operation of some unknown thing on the retina. If all animals were deaf, there would be no such thing as sound, because sound is a resultant of the operation of some unknown thing on the tympanum. If all men were without their present nervous system, there would be no such thing as pain, because pain is a resultant of the operation of some external thing on the specialized nervous system.

Light, colour, sound, taste, smell, are all states of consciousness; what they are beyond consciousness, as existences *per se*, we cannot know, we cannot imagine, because we can only conceive them *as* we know them. Light, with its myriad forms and colours—Sound, with its thousand-fold life—make Nature what Nature appears to us. But they do not exist *as such* apart from our consciousness; they are the investitures with which we clothe the world. Nature in her insentient solitude is an eternal darkness—an eternal silence.

Sceptics conclude, therefore, that the world *per se* in nowise resembles the world as it appears to us. Perception is an effect; and its truth is not the truth of *resemblance*, but of *relation*, *i.e.* it is the true operation of the world on us, the

true operation of cause and effect. But perception is not the true resemblance of the world: consciousness is no mirror reflecting external things.

Let us substitute for the metaphor of a mirror the more abstract expression: 'Perception is the effect of an external object acting on a sentient being,' and much of the confusion darkening this matter will be dissipated. An effect, we know, agrees with its cause, but it does not necessarily resemble it. An effect is no more a copy of the cause than pain is a copy of the application of fire to a finger: *ergo*, Perception can never be an accurate report of what things are *per se*, but only of what they are in relation to us.

It has been said that, although no single sense does actually convey to us a correct impression of anything, nevertheless we are enabled to confirm or modify the report of one sense by the report of another sense, and that the result of the whole activity of the five senses is a true impression of the external object. This curious fallacy pretends that a number of false impressions are sufficient to constitute a true one.

The conclusion to be drawn from the foregoing sceptical argument is this: There is no correspondence between the object and the sensation, except that of cause and effect. Sensations are not copies of objects; do not at all resemble them. As we can only know objects through sensation—*i.e.* as we can only know our sensations—we can never ascertain the truth respecting objects.

To answer this sceptical argument a psychology was needed which had not in those ages been dreamed of.

CHAPTER V.

SUMMARY OF THE EIGHTH EPOCH.

WE have now brought our narrative to the second crisis in the history of speculation. The scepticism which made the Sophists powerful, and which closed the first period of this history, we now behold once more usurping the intellects of men, and this time with far greater power. A Socrates appeared to refute the Sophists. Who is there to refute and discredit the Sceptics?

The Sceptics, and all thinkers during the epoch we have just treated were such, whether they called themselves Epicureans, Stoics, Pyrrhonists, or New Academicians,—the Sceptics, we say, were in possession of the most formidable arms. From Socrates, from Plato, and from Aristotle, they had borrowed their best weapons, and with these had attacked Philosophy, and attacked it with success.

All the wisdom of the antique world was powerless against the Sceptics. Speculative belief was reduced to the most uncertain ‘probability.’ Faith in philosophic Truth was extinct. Faith in human endeavour that way was gone. Philosophy was rejected as impossible.

But there was one peculiarity of the Socratic doctrine which was preserved even in the midst of scepticism. Socrates had made Ethics the great object of his inquiries: and all subsequent thinkers had given it a degree of attention which before was unknown. Philosophy contented itself with the Common-Sense doctrine of the Stoics, and the Probabilities of the Sceptics, which, however futile as philosophic principles, were efficacious enough as moral principles. Common-

Sense may be a bad basis for metaphysical or scientific reasoning; but it is not so bad a basis for a system of morals.

The protest, therefore, which Scepticism made against all Philosophy was not so anarchical in its tendency as the protest made by the Sophists; but it was more energetic, more terrible. In the wisdom of that age there lay no cure for it. The last cry of despair seemed to have been wrung from the baffled thinkers, as they declared their predecessors to have been hopelessly wrong, and declared also that their error was without a remedy.

It was, indeed, a saddening contemplation. The hopes and aspirations of so many incomparable minds thus irrevocably doomed; the struggles of so many men, from Thales, who first asked himself, Whence do all things proceed? to the elaborate systematization of the forms of thought which occupied an Aristotle—the struggles of all these men had ended in Scepticism. Little was to be gleaned from the harvest of their endeavours but arguments against the possibility of that Philosophy they were so anxious to form. Centuries of thought had not advanced the mind one step nearer to a solution of the problems with which, child-like, it began. It began with a child-like question; it ended with an aged doubt. Not only did it doubt the solutions of the great problem which others had attempted; it even doubted the possibility of any solution. It was not the doubt which begins, but the doubt which ends inquiry: it had no illusions.

This was the second crisis of Greek Philosophy. Reason thus assailed could only find a refuge in Faith; and the next period opens with the attempt to construct a Religious Philosophy.

NINTH EPOCH.

Reason allies itself with Faith, and Philosophy renounces its independence, becoming once more an instrument of Theology—The Alexandrian School.

CHAPTER I.

RISE OF NEO-PLATONISM.

§ I. ALEXANDRIA.

PHILOSOPHY no longer found a home in Greece; it had no longer worshippers in its native country, and was forced to seek them elsewhere. A period had arrived when all problems seemed to have been stated, and none seemed likely to be solved. Every system which human ingenuity could devise had been devised by the early thinkers; and not one had been able to withstand examination. In the early annals of speculation, a new and decisive advance is made whenever a new question is asked; to suggest a doubt, is to exercise ingenuity; to ask a question, is to awaken men to a new view of the subject. But now all questions had been asked: old questions had been revived under new forms: nothing remained to stimulate inquiry, nothing to give speculators a hope of success.

Unable to ask new questions, or to offer new answers to those already asked, the philosophers readily seized on the only means which enabled them to gain renown: they travelled. They carried their doctrines into Egypt and to Rome; and in those places they were listened to with wonder

and delight. Their old doctrines were novelties to a people who had no doctrines of its own; and, from the excessive cost of books in those days, almost all instruction being oral, the strangers were welcomed warmly, and the doctrines imported were as novel as if they had been just invented.

Philosophy, exiled from Greece, was a favoured guest in Alexandria and Rome: but in both cases it was a stranger, and could not be naturalized. In Alexandria, however, it made a brilliant display; and the men it produced gave it an originality and an influence which it never possessed in Rome.

Roman Philosophy was but a weak paraphrase of the Grecian. To speak Greek, to write Greek, became the fashionable ambition of Rome. The child was instructed by a Greek slave. Greek professors taught Philosophy and Rhetoric to aspiring youths. Athens had become the necessary '*tour*' which was to complete a man's education. It was there that Cicero learned those ideas which he delighted in setting forth in charming dialogues. It was there Horace learned that light and careless philosophy, which shines through the sparkling crystal of his verse. Wandering from the Academy to the Porch, and from the Porch to the Garden, he became imbued with a scepticism which checked his poetical enthusiasm; he learned to make a system of that pensive epicureanism which gives so peculiar a character to his poems.

In Rome, Philosophy might tinge the poetry, give weight to oratory, method to jurisprudence, and supply some topics of conversation; but it was no Belief filling the minds of serious men: it took no root in the national existence; it produced no great speculative thinkers.

In Alexandria the case was different. There several schools were formed, and some new elements introduced into the doctrines then existent. Great thinkers—Plotinus, Proclus, Porphyry—made it illustrious; and it had a rival, whose antagonism alone would confer immortal renown upon it: that rival was Christianity.

In no species of grandeur was the Alexandrian School deficient, as M. Saisset observes : * genius, power, and duration have consecrated it. Re-animating, during an epoch of decline, the fecundity of an aged civilization, it created a whole family of illustrious names. Plotinus, its real founder, resuscitated Plato ; Proclus gave the world another Aristotle ; and, in the person of Julian the Apostate, it became master of the world. For three centuries it was a formidable rival to the greatest power that ever appeared on earth—the power of Christianity ; and, if it succumbed in the struggle, it only fell with the civilization of which it had been the last rampart.

Alexandria, the centre of gigantic commerce, soon became a new metropolis of science, rivalling Athens. The Alexandrian Library is too celebrated to need more than a passing allusion ; to it, and to the men assembled there, we owe the vast labours of erudition in philosophy and literature which were of such service to the world.

Beside the Museum of Alexandria there rose into formidable importance the Didascalia of the Christians. In the same city, Philo the Jew, and Cœnesidemus the Pyrrhonist, founded their respective schools. Ammonius Saccas appears there. Lucian passes through at the same time that Clemens Alexandrinus is teaching. After Plotinus has taught, Arius and Athanasius will also teach. Greek Scepticism, Judaism, Platonism, Christianity—all have their interpreters within so small a distance from the temple of Serapis.

§ II. PHILO.

Alexandria, as we have seen, was the theatre of various struggles : of these we are to select one, and that one the struggle of the Neo-Platonists with the Christian Fathers.

Under the name of the Alexandrian School are designated, loosely enough, all those thinkers who endeavoured to find

* *Revue des Deux Mondes*, 1844, tome iii. p. 783.

a refuge from Scepticism in a new Philosophy, based on altogether new principles. Now, although these various thinkers by no means constitute a School, they constitute a Movement, and they form an Epoch in the history of Philosophy. We may merely observe that the 'Alexandrian School' and the 'Neo-Platonists' are not convertible terms: the former designates a whole movement, the latter designates the most illustrious section of that movement.

Philo the Jew is the first of these Neo-Platonists. He was born at Alexandria, a few years before Christ. The influence of Greek ideas had long been felt in Alexandria, and Philo, commenting on the writings of the Jews, did so in the spirit of one deeply imbued with Greek thought. His genius was Oriental, his education Greek; the result was a strange mixture of mysticism and dialectics.* To Plato he owed much: but to the New Academy, perhaps more. From Carneades he learned to distrust the truth of all sensuous knowledge, and to deny that Reason had any criterion of truth.

Thus far he was willing to travel with the Greeks; thus far had dialectics conducted him. But there was another element in his mind beside the Greek: there was the Oriental mystical element. If human knowledge is a delusion, we must seek for truth in some higher sphere. The Senses may deceive; Reason may be powerless; but there is still a faculty in man—there is Faith. Real Science is the gift of God: its name is Faith; its origin is the goodness of God: its cause is Piety.

This conception is not Plato's, yet is nevertheless Platonic. Plato would never have thus condemned Reason for the sake of Faith; and yet he, too, thought that the nature of God could not be known, although his existence could be proved. In this he would have agreed with Philo. But, although Plato does not speak of Science as the gift of God,

* St. Paul thus comprehensively expresses the national characteristic of the Jews and Greeks: 'The Jews require a sign (*i.e.* a miracle), and the Greeks seek after wisdom (*i.e.* philosophy).'—1 *Corinth.* i. 22.

he does in one place so speak of Virtue ; and he devotes the whole dialogue of the *Meno* to show that Virtue cannot be taught, because it is not a thing of the understanding, but a gift of God, The reasons he there employs may easily have suggested to Philo their application to Philosophy.

From this point Philo's Philosophy of course becomes a Theology. God is ineffable, incomprehensible : his existence may be known ; his nature can never be known : ὁ δ' ἄρα οὐδὲ τῷ νῷ καταληπτὸς, ὅτι μὴ κατὰ τὸ εἶναι μόνον. But to know that he exists is in itself the knowledge of his being one, perfect, simple, immutable, and *without attribute*. This knowledge is implied in the simple knowledge of his existence : he cannot be otherwise, if he exist at all. But to know this, is not to know in what consists his perfection. We cannot penetrate with our glance the mystery of his essence. We can only believe.

If however we cannot know God in his essence, we can obtain some knowledge of his Divinity : we know it in *The Word*. This λόγος—this *Word* (using the expression in its Scriptural sense)—fills a curious place in all the mystical systems. God being incomprehensible, inaccessible, an intermediate existence was necessary as an interpreter between God and Man, and this intermediate existence the Mystics called *The Word*.

The Word, according to Philo, is God's Thought. This Thought is twofold : it is λόγος ἐνδιάθετος, the Thought as embracing all Ideas (in the Platonic sense of the term *Idea*), *i. e.* Thought *as* Thought ; and it is λόγος προφορικός, the Thought *realized* : Thought become the World.

In these three *hypostases* of the Deity we see the Trinity of Plotinus foreshadowed. There is, first, God the Father ; secondly, the Son of God, *i. e.* the λόγος ; thirdly, the Son of the λόγος, *i. e.* the World.

This brief outline of Philo's Theology will sufficiently exemplify the two great facts which we are anxious to have understood :—1st, the union of Platonism with Oriental mysticism ; 2ndly, the entirely new direction given to

Philosophy, by uniting it once more with Religion. It is this direction which characterizes the Movement of the Alexandrian School. Reason had been shown to be utterly powerless to solve the great questions of Philosophy then agitated. Various Schools had pursued various Methods, but all with one result. Scepticism was the conclusion of every struggle. 'And yet,' said the Mystics, 'we have an idea of God and of his goodness; we have an ineradicable belief in his existence, and in the Perfection of his nature, consequently, in the beneficence of his aims. Yet these ideas are not innate; were they innate, they would be uniformly entertained by all men, and amongst all nations. If they are not innate, whence are they derived? Not from Reason; not from experience; then from Faith.'

Now, Philosophy, conceive it how you will, is entirely the offspring of Reason: it is the endeavour to explain by Reason the mysteries amidst which we 'move, live, and have our being.' Although it is legitimate to say, 'Reason is incapable of solving the problems proposed to it,' it is not legitimate to add, '*therefore* we must call in the aid of Faith.' In Philosophy, Reason must either reign alone, or abdicate. No compromise is permissible. If there are things between heaven and earth which are not dreamt of in our Philosophy—which do not come within the possible sphere of our Philosophy—we may believe in them, indeed, but we cannot christen that belief philosophical.

One of two things,—either reason is capable of solving the problems, or it is incapable: in the one case its attempt is philosophical; in the second case its attempt is futile. Any attempt to mix up Faith with Reason, in a matter exclusively addressed to the Reason, must be abortive. We do not say that what Faith implicitly accepts, Reason may not explicitly justify; but we say, that to bring Faith to the aid of Reason, is altogether to destroy the philosophical character of an enquiry. Reason may justify Faith; but Faith must not furnish conclusions *for* Philosophy. Directly Reason is abandoned, Philosophy ceases; and every explana-

tion then offered is a theological explanation, and must be put to altogether different tests from what a philosophical explanation would require.

Speculation was originally theological; but in process of time Reason timidly ventured upon what are called 'natural explanations;' and from the moment that it felt itself strong enough to be independent, Philosophy was established. In the early speculations of the Ionians we saw the pure efforts of Reason to explain mysteries. As Philosophy advanced, it became more and more evident that the problems attacked by the early thinkers were, in truth, so far from being nearer a solution, that their extreme difficulty was only just becoming appreciated. The difficulty became more and more apparent, till at last it was pronounced insuperable: Reason was declared incompetent. Then the Faith which had so long been set aside was again called to assist the inquirer. In other words, Philosophy, discovering itself to be powerless, resigned in favour of Theology.

When therefore we say that the direction given to the human mind by the Alexandrian School, in conjunction with Christianity—the only two spiritual movements which materially influenced the epoch we are speaking of—was a theological direction, the reader will at once see its immense importance, and will be prepared to follow us in our exposition of the mystical doctrines of Plotinus.

CHAPTER II.

ANTAGONISM OF CHRISTIANITY AND NEO-PLATONISM.

§ I. PLOTINUS.

WHILE Christianity was making rapid and enduring progress in spite of every obstacle; while the Apostles wandered from city to city, sometimes honoured as Evangelists, at other times insulted and stoned as enemies, the Neo-Platonists were developing the germ deposited by Philo, and not only constructing a theology, but endeavouring on that theology to found a Church. Whilst a new religion, Christianity, was daily usurping the souls of men, these philosophers fondly imagined that an old religion could effectually oppose it.

Christianity triumphed without much difficulty. Looking at it in a purely moral view, its superiority is at once apparent. The Alexandrians exaggerated the vicious tendency of which we have already seen the fruits in the Cynics and Stoics,—the tendency to despise Humanity. Plotinus blushed because he had a body: contempt of human personality could go no further. What was offered in exchange? The ecstatic perception; the absorption of personality in that of the Deity—a Deity inaccessible to knowledge as to love—a Deity which the soul can only attain by a complete annihilation of its personality.

The attempt of the Neo-Platonists failed, as it deserved to fail; but it had great talents in its service, and it made great noise in the world. It had three periods. The first of these, the least brilliant but the most fruitful, is that of Ammonius Saccas and Plotinus. A porter of Alexandria

becomes the chief of a School, and men of genius listen to him ; amongst his disciples are Plotinus, Origen, and Longinus. This School is perfected in obscurity, and receives at last a solid basis by the development of a metaphysical system. Plotinus, the author of this system, shortly after lectures at Rome with amazing success. It is then that the Alexandrian School enters upon its second period. With Porphyry and Iamblicus it becomes a sort of Church, and disputes with Christianity the empire of the world. Christianity had ascended the throne in the person of Constantine ; Neo-Platonism dethrones it, and usurps its place in the person of Julian the Apostate. But now mark the difference. In losing Constantine, Christianity lost nothing of its permanent power ; for its power lay in the might of convictions, and not in the support of potentates ; its power was a spiritual power, ever active, ever fruitful. In losing Julian, Neo-Platonism lost its power, political and religious. The third period commences with that loss : and the genius of Proclus bestows on it one last gleam of splendour. In vain did he strive to revive the scientific spirit of Platonism, as Plotinus had endeavoured to revive the religious spirit of Paganism : his efforts were vigorous but sterile. Under Justinian the School of Alexandria became extinct.

Such is the outward history of the School : let us now cast a glance at the doctrines which were there elaborated. In the writings of thinkers professedly eclectic, such as were the Alexandrians, it is obvious that the greater portion will be repetitions and reproductions of former thinkers ; and the historian will therefore neglect such opinions to confine himself to those which constitute the originality of the School.

The originality of the Alexandrians consists in having employed the Platonic Dialectics as a guide to Mysticism and Pantheism ; in having connected the doctrine of the East with the dialectics of the Greeks ; in having made Reason the justification of Faith.

There are three essential points to be here examined : their Dialectics, their theory of the Trinity, and their

principle of Emanation. By their Dialectics they were Platonists; by their theory of the Trinity they were Mystics; by their principle of Emanation they were Pantheists.

§ II. THE ALEXANDRIAN DIALECTICS.

The nature of the Platonic Dialectics we hope to have already rendered intelligible; so that in saying Plotinus employed them we are saved from much needless repetition. But although Dialectics formed the basis of Alexandrian philosophy, they did not, as with Plato, furnish the grounds of *belief*. As far as human philosophy went, Dialectics were efficient; but there were problems which did not come within the sphere of human philosophy, and for these another Method was requisite.

Plotinus agreed with Plato that there could only be a science of Universals. Every individual thing was but a phenomenon, passing quickly away, and having no real existence; it could not therefore be the object of philosophy. But these universals—these Ideas which are the only real existences—are they not also subordinate to some higher Existence? Phenomena were subordinate to Noumena; but Noumena themselves were subordinate to the One Noumenon. In other words, the Sensible World was but the Appearance of the Ideal World, and the Ideal World in its turn was but the mode of God's existence.

The question then arose: How do we know anything of God? The Sensible World we perceive through our senses; the Ideal World we gain glimpses of through the reminiscence which the Sensible World awakens in us; but how are we to take the last step—how are we to know the Deity?

I am a finite being; but how can I comprehend the Infinite? As soon as I comprehend the Infinite, I am infinite myself: that is to say, I am no longer myself, no longer that finite being, having a consciousness of his own separate existence.* If, therefore, I attain to a knowledge of

* *Τίς ἂν οὖν τὴν δύναμιν αὐτοῦ ἔλοι δμοῦ πᾶσαν; εἰ γὰρ δμοῦ πᾶσαν, τί ἔν τις αὐτοῦ διαφέροι;—*Plotinus, *Enn.* v. lib. 5. c. 10.

the Infinite, it is not by my Reason, which is finite and embraces only finite objects, but by some higher faculty, a faculty altogether impersonal, which identifies itself with its object.

‘The identity of Subject and Object—of the thought with the thing thought of—is the only possible ground of knowledge.’ This position, which some of our readers will recognise as a fundamental position of Modern German speculation, is so removed from all ordinary conceptions, that we must digress awhile in order to explain it.

Knowledge and Being are identical; to know more is to *be* more. This is not, of course, maintaining the absurd proposition that to know a horse is to be a horse: all we know of that horse is only what we know of the changes in ourselves occasioned by some external cause; and identifying our internal change with that external cause, we call it a horse. Here knowledge and being are identical. We really know nothing of the external cause (horse), we only know our own state of being; and to say, therefore, that ‘in our knowledge of the horse we are the horse,’ is only saying, in unusual language, that our knowledge is a state of our being, and nothing more. Knowledge is only a state of our own consciousness, excited by some unknown cause. The cause *must* remain unknown, if knowledge is effect, not cause.

An apple is presented to you; you see it, feel it, taste it, smell it, and are said to know it. What is this knowledge? Simply a consciousness of the various ways in which the apple affects you. Are you blind and cannot see it? there is one quality less which it possesses, *i.e.* one mode less in which it is possible for you to be affected. Are you without the senses of smell and taste? there are two other deficiencies in your knowledge of the apple. So that, by taking away your senses, we take away from the apple each of its qualities: in other words, we take away the means of your being affected. Your knowledge of the apple is reduced to nothing. In a similar way, by endowing you with more

senses we increase the qualities of the apple ; we increase your knowledge by enlarging your being. Thus are Knowledge and Being identical ; knowledge is a state of Being as knowing.

‘If,’ said Plotinus, ‘knowledge is the same as the thing known, the Finite, as Finite, never can know the Infinite, because it cannot *be* the Infinite. To attempt, therefore, to know the Infinite by Reason is futile, it can only be known in immediate presence, *παρουσία*. The faculty by which the mind divests itself of its personality is Ecstasy. In this Ecstasy the soul becomes loosened from its material prison, separated from individual consciousness, and becomes absorbed in the Infinite Intelligence from which it emanated. In this Ecstasy it contemplates real existence ; it identifies itself with that which it contemplates.’

The enthusiasm upon which this Ecstasy is founded is not a faculty which we constantly possess, such as Reason or Perception : it is only a transitory state, at least so long as our personal existence in this world continues. It is a flash of rapturous light, in which Reminiscence is changed into Intuition, because in that moment the captive soul is given back to its parent, its God. The bonds which attach the soul to the body are mortal ; and God, our father, pitying us, has made those bonds, from which we suffer, fragile and delicate, and in his goodness he gives us certain intervals of respite : *Ζεὺς δὲ πατὴρ ἐλέησας πονουμένας, θνητὰ αὐτῶν τὰ δεσμὰ ποιῶν περὶ ἃ πονοῦνται, δίδωσιν ἀναπαύλας ἐν χρόνοις.*

The Oriental and mystical character of this conception is worth remarking ; at the same time there is a Platonic element in it, which may be noticed. Plato, in the *Ion*, speaks of a chain of inspiration, which descends from Apollo to poets, who transmit the inspiration to the rhapsodists ; the last links of the chain are the souls of lovers and philosophers, who, unable to transmit the divine gift, are nevertheless agitated by it. The Alexandrians also admit the divine inspiration : not that inspiration which only warms and

exalts the heart, but that inspiration revealing the Truth which Reason can neither discern nor comprehend. Whether, in ascending through the various sciences and laboriously mounting all the degrees of Dialectics, we finally arrive at the summit, and tear away the veil behind which the Deity is hidden; or, instead of thus slowly mounting, we arrive at the summit by a sudden spring, by the force of virtue or by the force of love, the origin of this revelation is the same: the Poet, the Prophet, and the Philosopher only differ in the point of departure each takes. Dialectics, therefore, though a valuable method, is not an infallible one for arriving at Ecstasy. Everything which purifies the soul and makes it resemble its primal simplicity, is capable of conducting it to Ecstasy. Besides, there are radical differences in men's natures. Some souls are ravished with Beauty; and these belong to the Muses. Others are ravished with Unity and Proportion; and these are Philosophers. Others are more struck with Moral perfections; and these are the pious and ardent souls who live only in religion.

Thus, then, the passage from simple Sensation, or from Reminiscence, to Ecstasy, may be accomplished in three ways. By Music (in the ancient and comprehensive sense of the term), by Dialectics, and by Love or Prayer. The result is always the same—the victory of the Universal over the Individual.

Such is the answer given by the Alexandrians to that world-old question, How do we know God? The Reason of man is incompetent to such knowledge, because Reason is finite, and the finite cannot embrace the infinite. But, inasmuch as man has a knowledge of the Deity, he must have obtained it in some way: the question is, In what way? This question, which the Christian Fathers answered by referring to Revelation, the Alexandrians could only answer by declaring Ecstasy to be the medium of communication, because in Ecstasy the soul lost its personality and became absorbed in the infinite Intelligence.

We may read in this an instructive lesson respecting the

vicious circle in which all such reasonings are condemned to move :—

‘ The one poor finite being in the abyss
Of infinite being twinkling restlessly ’—

this finite being strives to comprehend that which includes it, and in the impossible attempt exerts its confident ingenuity.

Asserting that the finite *as* finite cannot comprehend the infinite, the Alexandrian hypothesis is at least consistent in making the finite become, for an instant, infinite. The grounds however upon which this hypothesis is framed are curious. The axiom is this :—The finite *cannot* comprehend the infinite. The problem is this :—How *can* the finite comprehend the infinite? And the solution is :—The finite must *become* the infinite.

Absurd as this is, it is the conclusion deduced by a vigorous intellect from premisses which seemed indisputable. It is only one of the absurdities inseparable from the attempted solution of an insoluble problem.

§ III. THE ALEXANDRIAN TRINITY.

We have said that the philosophy of the Alexandrians was a theology; their theology may be said to be concentrated in the doctrine of the Trinity. Nearly allied to the mystery of the Incarnation, which was inseparable from the mystery of Redemption, the dogma of the Holy Trinity was, as M. Saisset remarks, the basis of all the Christian metaphysics. The greater part of the important heresies, Arianism, Sabelianism, Nestorianism, &c., resulted from differences respecting some portion of this doctrine. It becomes, therefore, a matter of high historical interest to determine its parentage. Some maintain that the Trinity of the Christians was but an imitation of that of the Alexandrians; others accuse the Alexandrians of being the imitators. The dispute has been angrily conducted on both sides.*

* Such of our readers as may desire a compendious statement of the question are referred to M. JULES SIMON, *Histoire de l'École d'Alexandrie*, vol. i. pp. 308–341,

The Alexandrian Trinity is as follows :—God is triple, and, at the same time, one. His nature contains within it three distinct *Hypostases* (Substances, *i.e.* Persons), and these three make one Being. The first is the Unity : not The One Being, not Being at all, but simple Unity. The second is the Intelligence, which is identical with Being. The third is the Universal Soul, cause of all activity and life.

Such is the formula. Let us now see how their Dialectics conducted them to it. On looking abroad upon the world, and observing its constant transformations, what is the first thing that presents itself to our minds as the cause of all these changes ? It is life. The whole world is alive ; and, not only alive, but seemingly participating in a life similar to our own. On looking deeper, we discover that life itself is but an effect of some higher cause ; and this cause must be the ‘Universal’ which we are seeking to discover. Analogy suggests that it is Activity—Motion. But with this Motion we cannot proceed far. It soon becomes apparent to us that the myriad on-goings of nature are not merely activities, but *intelligent* activities. No hazard rules this world. Intelligence is everywhere visible. The cause, then, we have been seeking is at last discovered : it is an Intelligent Activity. Now, what is this, but that mysterious force residing within us, directing us, impelling us ? What is this Intelligent Activity but a soul ? The soul which impels and directs us is an image of the Soul which impels and directs the world. God, therefore, is the eternal Soul, the *ψυχή*. We have here the first Hypostasis of the Alexandrians.

On a deeper inspection this notion turns out less satisfactory. The dialectician, whose whole art consists in dividing and subdividing, in order to arrive at pure unity—who is always unravelling the perplexed web of speculation, to lay bare at last the unmixed One which had become enveloped in the Many—the dialectician, bred up in the Schools of Plato and Aristotle, could not rest satisfied with so complex an

and to the article by M. SAISSET, in the *Revue des Deux Mondes*, before referred to.

entity as an Intelligent Activity. There are at least two ideas here, and two ideas entirely distinct in nature, viz. Intelligence and Motion. Now, although these might be united in some idea common to both yet superior to both, neither of them could be considered as the last term in an analysis. The Intelligence, when analyzed, is itself the activity of some intelligent being, of Mind, λόγος.

God, therefore, is Mind, absolute, eternal, immutable. We have here the second Hypostasis. Superior to the Divine Soul, *ψυχὴ τοῦ παντός*, which is the cause of all activity, and king of the sensible world, *χορηγὸς τῆς κινήσεως, βασιλεὺς τῶν γυγνομένων*, we find the Divine Mind, *νοῦς*, the magnificence of which we may faintly conceive by reflecting on the splendours of the sensible world, with the Gods, Men, Animals, and Plants, which adorn it: splendours which are but imperfect images of the incomparable lustre of eternal truth. The Divine Mind embraces all the intelligible Ideas which are without imperfection, without movement. This is the Age of Gold, of which God is the Saturn. For Saturn, of whom the Poets have so grandly sung, is the Divine Intelligence; that perfect world which they have described, when

'Ver erat æternum: placidique tepentibus auris
Mulcebant Zephyri natos sine semine flores.
Mox etiam fruges tellus inarata ferebat;
Nec renovatus ager gravidis canebat aristis.
Flumina jam lactis, jam flumina nectaris ibant;
Flavaque de viridi stillabant ilice mella.*

That golden age is the Intelligible World, the eternal thought of eternal Intelligence.

A word on this Alexandrian *νοῦς*. It is Thought abstracted from all thinking; it does not reason: for to reason is to acquire a knowledge of something; he who reasons, arrives at a consequence from his premisses, which he did not see in

* 'The flowers unsown in fields and meadows reigned;
And western winds immortal spring maintained.
In following years the bearded corn ensued
From earth unasked; nor was that earth renewed.
From veins of valleys milk and nectar broke,
And honey sweating from the pores of oak.'—DRYDEN'S *Ovid*.

those premisses without effort. But God sees the consequence simultaneously with the premisses. His knowledge resembles our knowledge as hieroglyphic writing resembles our written language: that which we discursively develope, he embraces at once.

This *νοῦς* is at the same time the eternal existence, since all Ideas are united in it. It is the *νόησις νοήσεως νόησις* of Aristotle,—or, to use the language of Plotinus, the Sight Seeing, the identity of the act of seeing with the object seen: *ἔστι γὰρ ἡ νόησις ὄρασις ὁρῶσα, ἄμφω τὸ ἕν*,—a conception which will at once be understood by recurring to our illustration of the identity of Knowledge and Being.

One would fancy that this was a degree of abstraction to satisfy the most ardent dialectician; to have analyzed thus far, and to have arrived at pure Thought and pure Existence—the Thought apart from Thinking and the Existence apart from its modes—would seem the very limit of human ingenuity, the last abstraction possible. But no: the dialectician is not yet contented: he sees another degree of abstraction still higher, still simpler: he calls it Unity. God, as Existence and Thought, is God as conceived by human intelligence: but, although human intelligence is unable to embrace any higher notion of God, yet is there in human intelligence a hint of its own weakness and an assurance of God's being something ineffable, incomprehensible. God is not, *en dernière analyse*, Existence and Thought. What is Thought? What is its type? The type is evidently human reason. What does an examination of human reason reveal? This:—To think is to be aware of some object from which the thinker distinguishes himself. To think is to have a self-consciousness, to distinguish one's personality from that of all other objects, to determine the relation of self to not-self. But nothing is external to God: in him there can be no distinction, no determination, no relation. Therefore God, in his highest hypostasis, cannot think, cannot be thought, but must be something superior to thought. Hence, the necessity for a third hypostasis, which,

third in the order of discovery, is first in the order of being : it is Unity,—τὸ ἐν ἁπλοῦν.

The Unity is not Existence, neither is it Intelligence—it is superior to both : it is superior to all action, to all determination, to all knowledge ; for, in the same way as the *multiple* is contained in the *simple*, the many in the one, in the same way is the simple contained in the unity ; and it is impossible to discover the truth of things until we have arrived at this absolute unity ; for, how can we conceive any existing thing except by unity ? What is an individual, an animal, a plant, but that unity which presides over multiplicity ? What even is multiplicity—an army, an assembly, a flock—when not brought under unity ? Unity is omnipresent ; it is the bond which unites even the most complex things. The Unity which is absolute, immutable, infinite, and self-sufficing is not the numerical unit, not the indivisible point. It is the absolute universal *One* in its perfect simplicity. It is the highest degree of perfection—the ideal Beauty, the supreme Good, πρῶτον ἀγαθόν.

God therefore in his absolute state—in his first and highest hypostasis—is neither Existence nor Thought, neither moved nor mutable : he is the simple Unity, or, as Hegel would say, the Absolute Nothing, the Immanent Negative.

Our readers will perhaps scarcely be patient under this inflection of dialectical subtlety ; but the absurdities of genius are often more instructive than the discoveries of common men, and the subtleties and extravagances of the Alexandrians are fraught with lessons. If rigorous logic conducted eminent minds to conceptions which appear extravagant and sterile, they may induce in us a wholesome suspicion of the efficacy of that logic to solve the problems it is occupied with. Nor is the lesson inapplicable to our own age. German metaphysicians resemble Plotinus more than Plato or Aristotle : nor is the reason difficult of discovery. Plotinus, coming after all the great thinkers had asked almost every metaphysical question and given almost every possible answer, was condemned either to scepticism, or to accept any

consequences of his dialectics, how extreme. Philosophy was in this dilemma: either to abdicate, or to be magnificently tyrannical: it chose to be the latter. Plotinus therefore shrank from no extravagances: where Reason failed, there he called upon Faith. The Germans who saw the establishment of Positive Science, on the one hand, and the destructive results of Kant's *Critique* on the other, found Philosophy in a similar dilemma: compelled either to declare itself incapable, or to proclaim its despotism and infallibility.

The Hegelian faith in dialectics may be contrasted with the Alexandrian faith in Ecstasy. Both proceed with peaceable dogmatism to explain that God is this, or that; to explain how the Nothing *becomes* the existing world; to explain many other inexplicable things; and, if you stop them with the simple inquiry, How do you know this? what is your ground of certitude? they smile, allude blandly to *Vernunft*, and continue their exposition.

Plotinus, indeed, said, that although Dialectics raise us to some conviction of the existence of God, we cannot speak of his nature otherwise than negatively: *ἐν ἀφαιρέσει πάντα τὰ περὶ τοῦτον λεγόμενα*. We are forced to admit his existence, though it is not correct to speak even of his existence. To say that he is superior to Existence and Thought is not to define him; it is only to distinguish him from what he is not. What he is we cannot know; it would be ridiculous to endeavour to comprehend him. This difference apart, there is remarkable similarity in the speculations of the Alexandrians and the Hegelians: a similarity which all will detect who are capable of detecting identity of thought under diversity of language.

To return to the Alexandrian Trinity, we see in it the Perfect Principle, the One, τὸ ἐν ἀπλουν, which generates but is ungenerated; the Principle generated by the Perfect is of all generated things the most perfect: it is therefore Intelligence: νοῦς. In the same way as Intelligence is the Word (λόγος) of the One and the manifestation of its power, so also the Soul is the Word and manifestation of the Intel-

ligence, *εἶον καὶ ἡ ψυχὴ λόγος νοῦ*. The three hypostases of the Deity are therefore, 1st, the Perfect, the Absolute Unity, *τὸ ἐν ἀπλοῦν*; 2nd, the First Intelligence, *τὸ νοῦν πρώτως*; 3rd, the Soul of the world.

This Trinity is very similar to the threefold nature of God in Spinoza's system. Spinoza says, that God is the infinite Existence, having two infinite Attributes, namely, Extension and Thought. Now this Existence, which has neither Extension nor Thought except as Attributes, although verbally differing from the Absolute Unconditioned, the One, of Plotinus, is really the same: it is the last abstraction which the human faculty can make: it is that *of which* nothing can be predicated, and yet which must be the final predicate of everything: division and subdivision, however prolonged, stop there, and admit as final the Unconditioned Unconditional Something, or that which Proclus (and after him Hegel) calls The Non-Being, *μὴ ὄν*, although it is not correct to call it Nothing, *μηδέν*.

This conception, which it is impossible to state in words without stating gross contradictions, is the result of rigorous logic. The process is this: I have to discover that which is at the bottom of the mystery of existence—the great First Cause; and, to do this I must eliminate one by one everything which does not present itself as self-existing, self-sufficing, as necessarily the *first* of all things, the *ἀρχή*.

The ancients began their speculations in the same way, but with less knowledge of the conditions of inquiry. Hence Water, Air, Soul, Number, Force, were severally accepted as *Principia*. In the time of the Alexandrians something more subtle was required. They asked the same question, but they asked it with a full consciousness of the failure of their predecessors. Even Thought would not satisfy them as a *Principium*; nor were they better satisfied with abstract Existence. They said there is something beyond Thought, something beyond Existence: there is *that which* thinks, *that which* exists. This '*that*,' this Indeterminate Ineffable,

is the Principium. It is self-sufficing, self-existent; nothing can be conceived beyond it. In the old Indian hypothesis of the world being supported by an elephant, who stood on the back of a tortoise, the tortoise standing on nothing, we see a rude solution of the same problem : the mind is forced to arrest itself somewhere, and wherever it arrests itself it is forced to declare, explicitly or implicitly, that it stops at Nothing; because, as soon as it predicates anything of that at which it stops, it is forced to admit *something* beyond: if the tortoise stands on the back of some other animal, *upon what* does that other animal stand?

Philosophy, when employed upon this subject, necessarily abuts upon Nothing, upon absolute Negation; the terms in which this conception is clothed may differ, but the conception remains the same: Plotinus and Hegel shake hands.

In reviewing the history of Greek speculation, from the 'Water' of Thales to the 'Absolute Negation' of Plotinus, what a reflection is forced upon us of the vanity of metaphysics! So many years of laborious inquiry, so many splendid minds engaged, and, after the lapse of ages, the inquiry remains the same, the answer only more ingeniously absurd! Was, then, all this labour vain? Were those long laborious years all wasted? Were those splendid minds all useless? No: earnest endeavour is seldom without result. Those centuries of speculation were not useless, they were the education of the human race. They taught mankind this truth at least: the Infinite cannot be known by the finite: and man, as finite, can only know phenomena. Those labours, so fruitless in their immediate object, have indirect lessons. The speculations of the Greeks preserve the same privilege as the glorious products of their art and literature; they are the models from which the speculations of posterity are reproductions. The history of modern metaphysical philosophy is but the narrative of the same struggles which agitated Greece. The same problems are revived, and the same answers offered.

§ IV. THE DOCTRINE OF EMANATION.

Ancient Metaphysics propounds three questions: Has human knowledge any absolute certainty? What is the nature of God? What is the origin of the World?

Our review of the various attempts to answer these questions has ended in the Alexandrian School, which answered them as follows: 1st. Human knowledge is necessarily uncertain; but this difficulty is got over by the hypothesis of an Ecstasy, in which the soul becomes identified with the Infinite. 2nd: The nature of God is a triple Unity—three hypostases of the One Being. 3rd. The origin of the world is the law of *Emanation*.

This third answer is of course implied in the second. God, as Unity, is not Existence; but he becomes Existence by the Emanation from his Unity (Intelligence), and by the second emanation from his Intelligence (Soul), and this Soul, in its manifestations, is the World.

Hitherto dualism has been the universal creed of those who admitted any distinction between the world and its Creator. Jupiter organising Chaos; the God of Anaxagoras whose force is wasted in creation; the *δημιουργός* of Plato who conquers and regulates Matter and Motion; the immovable Thought of Aristotle: all these creeds were dualistic; and, indeed, to escape dualism was not easy.

If God is distinct from the World, dualism is at once assumed. If he is distinct, he must be distinct in Essence. If distinct in essence, the question of Whence came the world? is not answered; for the world must have existed contemporaneously with him.

Here lies the difficulty: either God made the world, or he did not. If he made it, whence did he make it? He could not, said logic, make it out of Nothing: for Nothing can come of Nothing; he must, therefore, have made it out of his own substance. If it is made out of his own substance, then it is identical with him: it must then have existed already in him,

or he could not have produced it. But this identification of God with the world is Pantheism; and begs the question it should answer.

If he did not make it out of his own substance, he must have made it out of some substance already existing; and thus also the question still remains unanswered.

This problem was solved by the Christians and Alexandrians in a similar, though apparently different, manner. The Christians said that God created the world out of Nothing by the mere exercise of his omnipotent will; for to Omnipotence everything is possible; one thing is as easy as another. The Alexandrians said that the world was distinct from God *in act* rather than *in essence*: it was the manifestation of his will, or of his intelligence.

Thus the world is God; but God is not the world. Without the necessity of two principles, the distinction is preserved between the Creator and the Created. God is not confounded with Matter; and yet philosophy is no longer oppressed with the difficulty of accounting for two eternally existing and eternally distinct principles.

Plotinus had by his Dialectics discovered the necessity of Unity as the basis of existence: he had also by the same means discovered that the Unity could not possibly remain alone: otherwise, there would never have been the Many. If the Many implies the One, the One also implies the Many. It is the property of each principle to engender that which follows it: to engender it in virtue of an ineffable power which loses nothing of itself. This power, ineffable, inexhaustible, exercises itself without stopping, from generation to generation, till it attains the limits of possibility.

By this law, which governs the world, and from which God himself cannot escape, the totality of existences, which Dialectics teach us to arrange in a proper hierarchy from God to sensible Matter, appear to us thus united in one indissoluble chain, since each being is the necessary product of that which precedes it, and the necessary producer of that which succeeds it.

If asked why Unity should ever become Multiplicity—why God should ever manifest himself in the world? the answer is ready: The One, as conceived by the Eleatics, had long been found incomplete; for a God who had no intelligence could not be perfect: as Aristotle says, a God who does not think is unworthy of respect. If, therefore, God is Intelligent, he is necessarily active: a force that engenders nothing, can that be a real force? It was, therefore, in the very nature of God a necessity for him to create the world: *ἐν τῇ φύσει ἦν τὸ ποιεῖν*.

God, therefore, is in his very essence a Creator, *ποιητής*. He is like a Sun pouring forth his rays, without losing any of its substance: *οἶον ἐκ φωτός, τὴν ἐξ αὐτοῦ περιλαμψιν*. All this flux—this constant change of things, this birth and death—is but the restless manifestation of a restless force. These manifestations have no absolute truth, no duration. The individual perishes, because individual: it is only the universal that endures. The individual is the finite, the perishable; the universal is the infinite, immortal. God is the only existence: he is the real existence, of which we, and other things, are but the transitory phenomena. And yet timid ignorant man, timid because ignorant, fears death! To die is to live the true life: it is to lose, indeed, sensation, passions, interests, to be free from the conditions of space and time,—to lose personality; but it is also to quit this world and to be born anew in God,—to quit this frail and pitiable individuality, to be absorbed in the being of the Infinite. To die is to live the true life. Some faint glimpses of it—some overpowering anticipations of a bliss intolerable to mortal sense, are realised in the brief moments of Ecstasy, wherein the Soul is absorbed in the Infinite, although it cannot long remain there. Those moments, so exquisite, yet so brief, are sufficient to reveal to us the divinity, and to show us that deep embedded in our personality there is a ray of the divine source of light, a ray which is always struggling to disengage itself, and return to its source. To die is to live the true life; and

Plotinus dying, said, in his agony, 'I am struggling to liberate the divinity within me.'

This mysticism is worth attention, as indicative of the march of the human mind. In many preceding thinkers we have seen a very strong tendency towards the desecration of personality. From Heraclitus to Plotinus there is a gradual advance in this direction. The Cynics and the Stoics made it a sort of philosophical basis. Plato implicitly, and sometimes explicitly, gave it his concurrence. The conviction of man's insignificance, and of the impossibility of his ever in this world ascertaining the truth, seem to have oppressed philosophers with self-contempt. To curse the bonds which bound them to ignorance, and to quit a world in which they were thus bound, were the natural consequences of their doctrines; but, linked mysteriously as we are to life—even to the life we curse—our doctrines seldom lead to suicide. In default of suicide, nothing remained but Asceticism—a moral suicide. As man could not summon courage to quit the world, he would at least endeavour to lead a life as far removed from worldly passion and worldly condition as was possible; and he would welcome death as the only true life.

CHAPTER III.

PROCLUS.

PLOTINUS attempted to unite Philosophy with Religion, attempted to solve by Faith the problems insoluble by Reason; and the result of such an attempt was necessarily mysticism. But, although the mystical element is an important one in his doctrine, he did not allow himself to be seduced into all the extravagances which naturally flowed from it. That was reserved for his successors, Iamblicus in particular, who performed miracles, and constituted himself High Priest of the Universe.

With Proclus the Alexandrian School made a final effort, and with him its defeat was entire. He was born at Constantinople, A.D. 412. He came early to Alexandria, where Olympiodorus was teaching. He passed onwards to Athens, and from Plutarch and Syrianus he learnt to comprehend the doctrines of Plato and Aristotle. Afterwards, becoming initiated into the Theurgical mysteries, he was soon made a High Priest of the Universe.

The theological tendency is still more remarkable in Proclus than in Plotinus. He regarded the Orphic poems and the Chaldean oracles as divine revelations, and, therefore, as the real source of philosophy, if properly interpreted; and in this allegorical interpretation consisted his whole system.

‘ The intelligible forms of ancient poets,
 The fair humanities of old religion,
 The Power, the Beauty, and the Majesty,
 That had her haunts in dale, or piny mountain,
 Or forest by slow stream, or pebbly spring,
 Or chasms and wat’ry depths; all these have vanished,

They live no longer in the faith of reason !
 But still the heart doth need a language, still
 Doth the old instinct bring back the old names.
 And to yon starry world they now are gone,
 Spirits or Gods that used to share this earth
 With man as with their friend.* *

To breathe the breath of life into the nostrils of these defunct deities, to restore the beautiful Pagan creed, by interpreting its symbols in a new sense, was the aim of the whole Alexandrian School.

Proclus placed Faith above Science. It was the only faculty by which The Good, that is to say, The One, could be apprehended. 'The philosopher,' said he, 'is not the priest of one Religion, but of all Religions;' that is to say, he is to reconcile all modes of belief by his interpretations. Reason is the expositor of Faith. But Proclus made one exception: there was one Religion which he could not tolerate, which he could not interpret,—that was the Christian.

With this conception of his mission, it is easy to see that his method must have been eclectic. Accordingly, in making Philosophy the expositor of Religion, he relied upon the doctrines of his predecessors without pretending to discover new ones for his purpose. Aristotle, whom he called 'the philosopher of the understanding,' he regarded as the man whose writings formed the best introduction to the study of wisdom. In him the student learnt the use of his Reason; learnt also the forms of thought. After this preparatory study came the study of Plato, whom he called the 'philosopher of Reason,' the sole guide to the region of Ideas, that is, of Eternal Truths. The reader will probably recognise here the distinction between Understanding and Reason, revived by Kant, and so much insisted on by Coleridge and his followers.

Plato was the idol of Proclus; and the passionate disciple thought every word of the master an oracle; he discovered everywhere some hidden and oracular meaning, interpreting the simplest recitals into sublime allegories. Thus the

* Coleridge, in his translation of the *Piccolomini*.

affection of Socrates for Alcibiades became the slender text for a whole volume of mystical exposition.

It is curious to notice the transformations of Philosophy in the various schools. Socrates interpreted the inscription on the temple at Delphi, 'Know thyself,' as an exhortation to psychological and ethical study. He looked inwards, and there discovered certain truths which scepticism could not darken; and he discoursed, says his biographer, on Justice and Injustice, on things holy and things unholy.

Plato also looked inwards, hoping to find there a basis of philosophy; but his 'Know thyself' had a different significance. Man was to study himself, because, by becoming thoroughly acquainted with his mind, he would become acquainted with the eternal Ideas of which sense awakened Reminiscence. His self-knowledge was Dialectical, rather than Ethical. The object of it was the contemplation of eternal Existence, not the regulation of our worldly acts.

The Alexandrians also interpreted the inscription; but with them the Socratic conception was completely set aside, and the Platonic conception carried to its limits. 'Know thyself,' says Proclus, in his commentary on Plato's *First Alcibiades*, 'that you may know the essence from whose source you are derived. Know the divinity that is within you, that you may know the divine One of which your soul is but a ray. Know your own mind, and you will have the key to all knowledge.' These are not the words of Proclus, but they convey the meaning of many pages of his mystical dialectics.

We are struck in Proclus with the frank and decided manner in which Metaphysics is assumed to be the only possible science; we are struck with the *naïve* manner in which the fundamental error of metaphysical inquiry is laid open to view, and presented as an absolute truth. In no other ancient system is it stated more nakedly. If we desired an illustration of the futility of metaphysics, we could not find a better than is afforded by Proclus, who, be it observed, only pushed the premisses of others to their rigorous conclusions.

He teaches that the hierarchy of ideas, in which there is a

gradual generation from the most abstract to the most concrete, exactly corresponds with the hierarchy of existences, in which there is a constant generation from the most abstract (Unity) to the most concrete (phenomena): so that the relations which these ideas bear to each other, the laws which subordinate one to the other—in a word, the forms of the nomenclature of human conceptions—express the real causes, their action, their combinations; in fact, the whole system of the universe.*

This is frank. The objection to the metaphysician has been that he looks *inwards* to discover that which lies *without* him, hoping, in his own conceptions of that which he is seeking to know, to find the thing he seeks. The ‘philosophers of the Understanding’ aver that to analyse your mind is to learn the nature of your mind: nothing else. Proclus boldly assumes that to know the nature of your own mind is to know the whole universe. This is at least consistent. But one might reasonably ask how this knowledge is to be gained. Not simply by looking inwards, or else all philosophers would have gained it; not even by meditation. How then? Listen:—

‘Mercury, the Messenger of Jove, reveals to us Jove’s paternal will, and thus teaches us science; and, as the author of all investigation, transmits to us, his disciples, the genius of invention. The Science which descends into the soul from above is more perfect than any science obtained by investigation; that which is excited in us by other men is far less perfect. Invention is the energy of the soul. The Science which descends from above fills the soul with the influence of the higher Causes. The Gods announce it to us by their presence and by illuminations, and discover to us the order of the universe.’

Of course the mystic who had revelations from above dispensed with the ordinary methods of investigation; and here again we see Proclus consistent, though consistent in absurdity.

* This is also the doctrine of HEGEL.

CHAPTER IV.

CONCLUSION OF ANCIENT PHILOSOPHY.

WITH Proclus the Alexandrian School expired ; with him Ancient Philosophy ceased. Religion, and Religion only, seemed capable of affording satisfactory answers to the questions which perplexed the human race, and Philosophy was reduced to the subordinate office which the Alexandrians had consigned to the Aristotelian Logic. Philosophy became the vassal of Religion, no longer reigning in her own right.

Thus was the circle of endeavour completed. With Thales, Reason separated itself from Faith ; with the Alexandrians, the two were again united. The centuries between these epochs were filled with helpless struggles to overcome an insuperable difficulty.

The difference is great between the childlike question of the Ionian thinker, and the answer of the Alexandrian mystic : and yet each stands upon the same ground, and looks out upon the same troubled sea, hoping to detect a shore, ignorant that all Ontology

‘ is an arch where through
Gleams that untravelled world whose margin fades
For ever and for ever as we move.’

But to the reflective student, who thus sees these men, after centuries of endeavour, fixed on the self-same spot, the Alexandrian straining his eager eyes after the same object as the Ionian, and neither within the possible range of vision, there is something which would be unutterably sad, were it not corrected by the conviction that these men were fixed to one spot, because they had not discovered the only true pathway, a pathway which those who came after them securely trod.

Still, the spectacle of human failure, especially on so gigantic a scale, cannot be without some pain. So many hopes thwarted, so many great intellects wandering in error, are not to be thought of without sadness. But it bears a lesson which we hope those who have followed us thus far will not fail to read: a lesson on the vanity of ontological research; a lesson which almost amounts to a demonstration of the impossibility of the human mind ever compassing those exalted objects which its speculative ingenuity suggests as worthy of its pursuit. It points to that profound remark of Auguste Comte, that there exists in all classes of our investigations a constant and necessary harmony between the extent of our real intellectual wants, and the efficient extent, actual or future, of our real knowledge.

But these great thinkers, whose failures we have chronicled, did not live in vain. They left the great problems where they found them; but they did not leave Humanity as they found it. Metaphysics might be still a region of doubt; but the human mind, in its endeavours to explore that region, had learnt in some measure to ascertain its weakness and its force. Greek Philosophy was a failure; but Greek Inquiry had immense results. Methods had been tried and discarded; but great preparations for the real Method had been made.

Moreover Ethics had become elevated to the rank of a science. In the Pagan Religion morality consisted in obeying the particular Gods: to propitiate their favour was the only needful art. Greek Philosophy opened men's eyes to the importance of human conduct—to the importance of moral principles, which were to stand in the place of propitiations. The great merit of this is due to Socrates. He objected to propitiation as impious: he insisted upon moral conduct as alone guiding man to happiness here and hereafter.

But the Ethics of the Greeks were at the best narrow and egoistical. Morality, however exalted or comprehensive, only seemed to embrace the Individual; it was extremely incomplete as regards the Family; and had scarcely any suspicion of what we call Humanity. No Greek ever attained the

sublimity of such a point of view. The highest point he could attain was to conduct *himself* according to just principles; he troubled himself little with others.

So far advanced are we in the right direction—so earnestly are we engaged in the endeavour to perfect Social as well as Individual Ethics—that we are apt to look down upon the progress of the Greeks as trivial; but it was immense, and in the history of Humanity must ever occupy an honourable place.

Ancient Philosophy expired with Proclus. Those who came after him, although styling themselves philosophers, were in truth religious thinkers employing philosophical formulæ. No one endeavoured to give a solution of the three great problems: Whence came the world? What is the nature of God? What is the nature of human knowledge? Argue, refine, divide and subdivide as they would, the religious thinkers only used Philosophy as a subsidiary process: for all the great problems, Faith was their instrument.

The succeeding Epochs are usually styled the Epochs of Christian Philosophy; yet Christian Philosophy is a misnomer. A Christian may be also a philosopher; but to talk of Christian Philosophy is an abuse of language. Christian Philosophy means Christian Metaphysics; and that means the solution of metaphysical problems upon Christian principles. Now Christian Principles are but the Doctrines *revealed* through Christ; revealed because inaccessible to Reason; revealed and accepted by Faith, because Reason is utterly incompetent.

So that metaphysical problems, the attempted solution of which by Reason constitutes Philosophy, are solved by Faith, and yet the name of Philosophy is retained! But the very groundwork of Philosophy consists in reasoning, as the groundwork of Religion is Faith. There cannot, consequently, be a Religious Philosophy: it is a contradiction in terms. Philosophy may be occupied about the same problems as Religion; but it employs altogether different criteria, and depends on altogether different principles. Religion

may, and should, call in Philosophy to its aid; but in so doing it assigns to Philosophy only the subordinate office of illustrating, reconciling, or applying its dogmas. This is not a Religious Philosophy; it is Religion *and* Philosophy, the latter stripped of its boasted prerogative of deciding for itself, and allowed only to employ itself in reconciling the decisions of Religion and of Reason.

From these remarks it is obvious that our History, being a narrative of the progress of Philosophy only, will not include any detailed account of the so-called Christian Philosophy, because that is a subject strictly belonging to the History of Religion.

Once more we are to witness the mighty struggle and the sad defeat; once more we are to watch the progress and development of that vast but ineffectual attempt which the sublime audacity of man has for centuries renewed. Great intellects and great hopes are once more to be reviewed; and the traces noted which they have left upon that desert whose only semblance of vegetation is a mirage,—the desert without fruit, without flower, without habitation, arid, trackless, and silent, but vast, awful, and fascinating. To trace the footsteps of the wanderers—to follow them on their gigantic journeys—to point again the moral of

‘Poor Humanity’s afflicted will
Struggling in vain with ruthless destiny,’

will be the object of our SECOND VOLUME.

END OF THE FIRST VOLUME.

THE HISTORY OF PHILOSOPHY.

THE TRANSITION PERIOD.

Philosophy struggles to emancipate itself from Theology, and at the close of the Middle Ages finally succeeds.

ANCIENT PHILOSOPHY reigned for about 1,000 years before its final deposition by Theology. An interval of another 1,000 years may be assigned as the Transition Period between Ancient and Modern Philosophy, i.e. from the extinction of the Greek schools, in the sixth century, to the separation of Philosophy from Theology, by Bacon and Descartes, in the sixteenth.

The peculiarity of this Transition Period is the constant struggle of Reason to assert and justify her independence—the claim of Philosophy to exist as a function of the human mind. And this claim, under varying fortunes, was made good. The struggle, long doubtful, ended in emancipation. We have seen how Philosophy, disengaging itself from Theology, successively tried to solve all the capital problems; and how, failing everywhere, because the Method pursued was one which made failure inevitable, it once more, throughout Christendom, relapsed under the dominion of Theology. We have now to see the inevitable disquiet of Thought,

produced by the manifest incompetence of Theology to answer questions beyond its reach; we have to see Thought again seeking the aid of Philosophy, and in this search gradually becoming more and more impatient of Theology, till a final separation of the two is once more proclaimed. Thus Bacon and Descartes stand in a position somewhat analogous to that of Thales; but they have the incalculable advantage of inheriting the experience of twenty centuries, and with it the incomparable advantage of a new Method. If, in the three centuries which have since elapsed, there has been an immense progress in all departments of positive knowledge, it has been owing to this new Method. If at the same time there has been little or no progress in Metaphysics, the latest ontological systems being little distinguishable from the Alexandrian, this has been owing to the retention of the old Method, and the persistence in unverifiable speculation.

Although the Transition, commonly known as the Middle Ages, extends over nearly a thousand years, we must, as Hegel says,* put on seven-league boots to traverse it. The nature and scope of this History, no less than my own imperfect acquaintance with the writings of the period, render it necessary for my survey to be rapid. I shall distribute it into three chapters:—

1. SCHOLASTICISM.
2. ARABIAN PHILOSOPHY.
3. THE RISE OF POSITIVE SCIENCE.

Although each section would require a separate work to do it justice, it can only receive here a slight and superficial treatment, enough to carry on the story of philosophic evolution. The student will find ampler detail in the works I shall have to cite.

* HEGEL: *Gesch. d. Phil.* iii. 99.

CHAPTER I.

SCHOLASTICISM.

§ I. GENERAL SURVEY.

BY Scholasticism is meant the Philosophy which was dominant in the schools during the greater part of the Transition. It has long ceased to have any but an historical interest. That interest is, however, considerable, and would be more generally felt if History were studied in a scientific spirit.

As a Philosophy purporting to answer any of the great questions, its value is inappreciable, and its condemnation has long gone forth; nor can there be any wisdom in the attempt to reverse a verdict so absolute, so general, and so well founded. A few metaphysicians, clinging to their trust in the Subjective Method, and admiring the ingenuity and subtlety often displayed by the illustrious doctors of an early age, will energetically protest against the careless contempt exhibited by writers who are wholly ignorant of the works which they despise. And there is another reason for such a protest. The man who in this age can read with patience the works of an Abelard, an Aquinas, or an Albertus, must have a native affinity for dialectical ingenuity, which renders him incompetent to appreciate the grounds of the general neglect. Such a mind cannot perceive what is notorious to others: the failure of the Subjective Method; a failure made conspicuous by the success of the Objective Method. It is this failure which has closed the folios of Scholasticism; the depressing weariness and impatience which cause us to push them aside after each new effort at study, arise, I conceive, from our sense of the intrinsic

futility of the questions discussed, and the mode of discussing them, even more than from the arid and often frivolous poverty of the style. It is the geography of an undiscoverable country, described without splendour of imagination, and without wealth of suggestive analogy.

The work of the schools had to be done, but it is at an end. Their folios are fossils. Monstrous and lifeless shapes of a former world, having little community with the life of our own, they have for us an interest similar to that yielded by the megatherium, and the dinornis. We are no longer perplexed by their problems, but we are interested in the fact that their problems did once perplex the most eminent minds.

We must not forget that to Scholasticism we owe the emancipation of Philosophy. It was the first, and at that period the only possible, solvent of Theology. By establishing the claim of Reason—though only as a handmaid to Faith, *ancilla theologiæ*—it brought into vigorous activity the great instrument Doubt, the instrument of research. By its own failure in solving the questions it had raised, it prepared the way for the negative, but valuable solutions of Science. Men learned in reasoning freely to reason well. It was a great thing in those ages to reason on abstract subjects at all.

The universal dominion of Rome, fruitful in so many respects, was fatal to Science, then in its infancy. The disruption of the Empire, also in many respects beneficial to Humanity, was fatal to literature. Rome did her work, and left her legacy; but that legacy, so valuable as *discipline*, was less valuable as *culture*. Her dominion was succeeded by the dominion of the Church; and the Church, both by instinct and by precept, was opposed to Science and Literature. It is right that we should understand this. The great benefits which the Church conferred on Humanity can be denied only by a narrow philosophy; but her benefits were not unalloyed; and the disastrous influence she exercised on Letters and Science may be estimated by the simple fact

that, during the centuries of her undisputed dominion, not a single classic writer, not a single discoverer whose genius enlarged the intellectual horizon, not a single leader of modern thought arose to dignify her reign. The darkness of the Dark Ages was deepest when the power of the Church was least disputed: that darkness began to break when in the eleventh century the doctrines of the Church began to be called in question; the dawn was coeval with an insurrection.

Nor could it have been otherwise. The Church claimed spiritual supremacy, and aiming at the reconstruction of society on a basis of spiritual unity, was necessarily opposed to the pretensions of spiritual rivals. It held the highest truth in charge; with the highest it also claimed the lowest. Opposed as it was to this world, striving to regulate this life with a view to the life to come, its *other-worldliness*, while upholding an ideal before men's eyes, had the disadvantage of discrediting the real. Profane knowledge was, therefore, doubly despised; it was despised because it related to things of this world, and it was despised because it gave no insight into the next. It was dreaded even more than it was despised, dreaded because it claimed a share in the government of men's minds. The indignation which has so often vituperated the Church, because the Church was intolerant, would have been better directed against untutored human nature; for it is a grave error to suppose that bigotry is the monopoly of theologians, or that polemical unfairness is less conspicuous in science and philosophy than in theology. The distinguishing characteristic of theological intolerance is its belief in itself as a virtue. The conviction of finality fans into a theological flame the embers of bigotry that slumber in us all. Without rare largeness of mind, or exceptional sweetness of temper, we cannot be patient when our beliefs are opposed. Naturally we are persuaded of their truth; otherwise they would not be our beliefs; and the very love of truth, to which our opponent appeals, urges us to stand firmly by our (true) opinions. The only thing that could make us hesitate is an abiding consciousness of falli-

bility: and this is found in few minds only—those by nature sceptical and unstable, or by long training tutored into circumspection. In proportion to the importance we attach to our opinions, our irritation at doubt increases; and when our opinions have the consecration of deep feelings and large interests, it is inevitable that we should be alarmed and pained by contradiction. Hence the very word heresy, which simply means private judgment, has in all times borne an opprobrious connotation.*

The Church was dominant; and Theology, in all respects opposed to the development of the intellect and the enlargement of knowledge, had to be dissolved by Metaphysics before Science could gain a hearing. It was Scholasticism which acted as the solvent. And here we may see an illustration of Comte's law of evolution. An abrupt transition from theological explanations of the facts of the universe to scientific explanations—omitting the intermediate stage of Metaphysics—would have been disastrous. The Church held the position of spiritual headship. Science could not have grown up under its dominion, for no sooner would their essential rivalry have become manifest than the Church would at once have suppressed the audacious innovation of rational research.

An apparent contradiction may be seen in the fact that the Arabians had no such intermediate stage, but passed over to Science almost as soon as they entered upon intellectual inquiry. The contradiction is only apparent, not real. Science was cultivated by sceptical philosophers under sceptical emirs and caliphs. But this sudden burst of a novel enthusiasm was succeeded by centuries of absolute apathy. Islamism where it had been weak grew strong.

* 'The word heresy is Greek,' says HOBBS, 'and signifies a *taking* of anything, particularly the taking of an opinion. After the study of philosophy began in Greece, and philosophers disagreeing among themselves had started many questions not only about things natural, but also moral and civil, because every one *took* what opinion he pleased, each several opinion was called a *heresy*, which signified no more than a private opinion, without reference to truth or falsehood.'—Quoted by RICHARDSON: *English Dictionary*.

Caliphs and emirs, no less than philosophers, fell under the dominion of an energetic priesthood, and under that rule all intellectual activity withered. Theology in Europe grew weaker and weaker under the dissolving agency of Metaphysics. In Islam it grew stronger and stronger because its chief antagonist was Science, and *that* was too imperfectly matured to hold its place against Theology.

The alliance with, and subordination to, Theology, which constitute the fatal weakness of Scholasticism considered as Philosophy, constitute its great value as an agent in the evolution of thought. No wider reach was possible at that epoch. If Reason was to exercise its prerogative in a society governed by a Church, nothing but such an issue as Scholasticism could be permitted it. The dogmas were fixed. The solutions were found. Nothing remained for research, except the reconciliation of these dogmas with Reason. A new solution would have been a heresy. Philosophers were allowed to seek new routes; but they were not allowed to arrive at a new conclusion. It was something, however, to be allowed to take new routes. They thus trained themselves for travel.

‘Philosophy,’ said Tertullian, with perfect truth, ‘is the patriarch of all the heresies.’ In travelling along new roads it was inevitable that minds should arrive at new conclusions. The Church was alert. It scented a taint from afar. No sooner was danger signalled than persecution followed. This vigilance and violence greatly obstructed the free movement of thought. No questions, however seemingly remote, were long permitted to hold themselves aloof from theological direction. Plato and Aristotle could debate whether general terms were only terms or had also corresponding objects, and they debated this under no priestly dictation; but William of Champeaux and Abelard could only debate it under the ominous shadow of St. Peter’s.

And yet this theological obstruction was also in one sense an aid. In those days of ignorance and incurious apathy there was an advantage in having the stimulus of dogmas

which for all men had profound interest. On subjects remote from obvious and daily needs, our imperfect intellects need the stimulus of passion before they will undergo the toil of research. In those days, far more than in our own, men would not have given their lives to the discussion of abstruse and abstract questions unless sustained by the passionate fervour of theological controversy.

Something may also be said in favour of that art of disputation against which so much eloquence has been expended. It was doubtless carried to a dangerous and ridiculous excess, and seems utterly worthless and wearisome now. Yet it was to the athletes of the Middle Ages what parliamentary debate has been to the English: a good, though by no means an unmixed good, and far from the best. We may admit that the art was ineffectual as an instrument of research, and was so far injurious that it withdrew men's energies from patient contemplation of phenomena, and employed them in the easy but illusory manipulation of formulas, thus rearing curious exotics sterile of all flowers or fruit. Nevertheless, in those days any intellectual activity which could escape on the one hand from the oppression of barbarian indifference, and on the other from theological dictation, was of value; and as the admirable historian of scholasticism remarks: 'En pressant avec trop d'énergie, dans l'ardeur de la controverse, les problèmes de l'ordre logique, on devait nécessairement en faire sortir des problèmes ontologiques, psychologiques, métaphysiques. Est-ce que l'esprit humain, une fois engagé dans la voie de la recherche, peut s'arrêter avant d'être satisfait, avant de toucher le but, ou du moins avant de croire l'avoir touché?'

§ II. SCOTUS ERIGENA AND ANSELM OF CANTERBURY.

So much by way of general consideration. Descending to particulars, we find Scholasticism to be not a doctrine but a movement. It began with the schools opened by Charle-

* HAURÉAU: *De la Philosophie scolastique*, 1850, i. 419.

magne.* With these schools it flourished, and with them it declined. The instruction being oral, an art of disputation naturally arose; and the instruction was necessarily oral in the absence of a press. When the invention of printing furnished combatants with a wider arena and more effective weapons, the importance of the schools declined. Philosophy became secular, and passed from the priests to the public. But when the only means of addressing audiences was from professional chairs, students passed over the seas and over the Alps to catch the words which fell from the lips of some renowned teacher. Paris was for many years the Athens of Scholasticism. The diploma of philosophy was given there. He who had not listened to its professors was scouted as ignorant. From the remote corners of Britain and the fastnesses of Calabria, from Spain and Germany, from Italy and Poland, came the young clerks who felt within them the restlessness of thought. They started on foot, alone, animated by high hopes, to brave the many perils of that journey, glad if they could sometimes gain the protection of a troop of soldiers, happy if a night's shelter could be found at a monastery, or, failing that, they would urge their claim as scholars to the hospitality of private citizens—a claim rarely denied them.†

Of the many renowned teachers only a few names have now a familiar sound. The list is opened by Scotus Erigena,‡ with whom, in the middle of the ninth century, Scholasticism may be said to begin, if any definite beginning can properly be assigned to it.

And here, at its very origin, we find an element at work which was essential to progress, and without which the

* 'Dès l'ouverture des écoles du moyen âge ce titre fut donné à tous le professeurs chargés d'instruire la jeunesse. Employé adjectivement, il servit à désigner les diverses branches de leur enseignement, et l'on dit *la théologie scolastique, l'histoire scolastique, la philosophie scolastique*. En ce sens la philosophie scolastique est la philosophie professée dans les écoles du moyen âge.'—HAURÉAU, i. 7.

† HAURÉAU, i. 24.

‡ Compare ST.-RENÉ TAILLANDIER: *Scot. Erigena et la Philos. scolastique*. Strasbourg, 1843. And CHRISTLIEB: *Leben und Lehre des Scot. Erigena*. Gotha, 1860.

great subsequent influences of Arabian and Greek writers would have been powerless—the element of Doubt. Timidly as this potent weapon may have been handled, disguised as scepticism was under various subterfuges, conscious and unconscious, nevertheless its presence is unmistakable. Appearing in the shape of a feeble protest against Authority, and appealing to a higher wisdom than even that of the Fathers, it secured its footing in the domain of intelligence. The invocation of Reason, under no matter what disguise, is only the confused cry of Doubt. Faith has no need of Reason. If such aid be sought, it can only be to satisfy the unquiet intellect which cannot escape doubts. Scholasticism, as we have said, was the movement of the intellect to justify by Reason several of the dogmas of Faith. Here to excuse was to accuse.

In assigning this position to Scotus Erigena, I do not of course mean that he was the first doubter in the Christian empire, nor that he was in any way a concealed rationalist. Some modern historians probably need the correction suggested by Mr. Maurice; they may have fallen into the common error of reading modern meanings into ancient texts when they attribute to Erigena a rationalistic spirit. Nevertheless, under any interpretation of his words, there is great significance in the fact that Erigena could write thus:—

‘Thou art not ignorant,’ says the master, ‘that I think that which is first in nature is of greater dignity than that which is first in time.’ ‘This,’ says the disciple, ‘is known to almost all.’ ‘We have learnt further,’ says the master, ‘that Reason is first in nature, and Authority in time. For although nature was created together with time, Authority did not begin to exist from the beginning of nature and time. But Reason has arisen with nature and time from the beginning of things. Reason itself teaches this. For Authority no doubt hath proceeded from Reason, but Reason not by any means from Authority. And all Authority which is not approved by true Reason turns out to be weak.

But true Reason, seeing that it stands firm and immutable, protected by its own virtues, needs not to be strengthened by any confirmation of Authority. True Authority, indeed, seems nothing but Truth united by the power of Reason, and transmitted in letters by the holy Fathers for the benefit of posterity.' *

M. Guizot cites the following passages also from Erigena : 'We must not adduce the opinions of the holy Fathers unless when necessary to strengthen reasoning in the eyes of men who, unpractised in reasoning, yield rather to Authority than to Logic.' 'The safety of faithful souls consists in believing that which there is reason for affirming, and in comprehending that which there is reason for believing.'

It is possible, nay extremely probable, that Erigena may have had a very different conception from that which his words convey to our minds. 'The *ratio*,' according to Mr. Maurice, 'which was coeval with nature, and to which all things in time are secondary, is that fixed Purpose, that Eternal Reason and Order, which man's reason is created to investigate and perceive. Authority must not be set before this Reason precisely because it is the result of a Reason which is working under temporal conditions, though this Authority may be most hopeful in assisting the reason of any individual man in his efforts to break loose from its time boundaries, and to enter into the truth of which it is in search.'

By subtleties like these Erigena may have disguised from himself the tendency of his teaching, but the instinct of the Church was not thus to be led astray. It felt the presence of an enemy. Horus, bishop of Lyons, thus rang the tocsin : 'There have reached us the writings of a certain vain and upstart man, who disputing on the questions of prescience and predestination by the aid, as he boasts, of purely human and philosophic reasonings, has dared, without adducing the authority of the Scriptures and the Fathers, to

* Cited by MAURICE : *Mediæval Philosophy*, 1859, p. 63.

affirm certain things, as if they were to be accepted on the sole strength of his presumptuous assertion. . . Nevertheless, as we hear, this man is admired by many a one learned and versed in the wisdom of the schools, and who by his vain and pernicious eloquence so subjugates his auditors, that they no longer humbly submit themselves to the divine Scriptures, nor to the authority of the Fathers, but prefer to follow his fantastic reveries.*

Erigena made himself the mouthpiece of those who sought a rational basis, however narrow, for their convictions. This idea once suggested could not be disregarded. The Church thundered against it; but the very echoes of that thunder only aroused a more wide-spread and prolonged attention to the idea. The pretension of Reason once asserted, was too gratifying to the intellect not to find large acceptance. Erigena might be silenced; Berengarius was silenced; but Roscellinus appeared; and after him, with greater energy and immense effect, Abelard. Even Anselm, the saintly archbishop, helped the good cause in an indirect way: he consecrated the privileges of Reason by showing the harmony between Reason and Faith.†

In the introduction to his *Monologium*, Anselm tells us that his brethren frequently requested him to set down in writing the ideas he had communicated to them in conversation. 'They begged me to borrow no important argument from Scripture, but to employ the ordinary arguments such as might be intelligible to all, to remain faithful to the rules of simple debate, seeking no other proof than such as resulted necessarily from the logical sequence of evidence.' He consented; yet he declared that in his work he has advanced nothing which is not scrupulously accordant with the writings of the Fathers, principally St. Augustin. The dread of heresy, natural to such a man, is visible throughout; and at the

* Bishops in the ninth century seem to have been as powerful in argument as bishops in the nineteenth.

† There is a good monograph by M. CHARLES DE RÉMUSAT: *Saint Anselme de Cantorbéry*, Paris, 1853.

close of his invocation, which forms the first chapter of the *Prosologium*, he says: 'I do not attempt, O Lord, to penetrate thy profundity, because in no sense can I compare with it my intellect; but I do desire to comprehend thy truth, even though imperfectly, that truth which my heart believes and cherishes. For I seek not to comprehend in order to believe, but I believe in order to comprehend. I believe because if I did not believe I should never comprehend.'*

Faith was the regent of his philosophy. Human reason being incompetent to reach the heights of Revelation, the idea of disputing on any revealed doctrines was culpable temerity. The function of reason was to explain, not to dispute, the dogmas accredited by the Church. Hence the sub-title of his celebrated treatise *Prosologium* (in which he sets forth the *à priori* demonstration of the existence of God in terms scarcely distinguished from those subsequently used by Descartes) runs thus: *seu fides quærens intellectum*.†

Nevertheless, it is noticeable that Anselm always appeals to evidence and demonstration, not to authorities. It is in this that he is distinguished from the orthodox conservative minds of his age. The insurgent mind of Abelard took up the same position, but with more emphasis and ostentation. Him we may now consider more closely.

§ III. ABELARD.

The name of Abelard has been immortalised by association with that of a noble woman. It is because Heloise loved

* 'Neque enim quæro intelligere ut credam, sed credo ut intelligam. Nam et hoc credo, quia nisi credidero, non intelligam.' And in his *Epistles*, he says, 'Christianus per fidem debet ad intellectum proficere, non per intellectum ad fidem accedere, aut si intelligere non valet, a fide recedere.'

† The *Prosologium*, with the little tract in which GAUNILON pointed out the fundamental error of ANSELM in concluding that whatever was true of ideas must be true of realities, and ANSELM's reply, are among the rare scholastic works which, as far as my experience extends, a modern can read with the same pleasure as he would read any recent metaphysical treatise. They are subtle without being frivolous or wearisome. A translation of all three, together with the *Monologium*, may be found in BOUCHITTÉ: *Le Rationalisme Chrétien à la fin du XI^e siècle*. Paris, 1842. Another translation of these four treatises may be found in the *Opuscoli Filosofici* of Signor ANTONIO ROSSI. Florence, 1864.

him, that posterity feels interested in him. M. Michelet indeed thinks that to Abelard she owes her fame: 'without his misfortunes she would have remained obscure, unheard of;' and in one sense this is true; but it is also true that, without her love, Abelard would have long ago ceased to inspire any interest: for his was essentially a shallow, selfish nature. His popularity was rapid, loud, and scandalous. He was fitted for it, lived for it. But many a greater name has faded from the memories of men; many a once noisy reputation fails to awaken a single echo in posterity. Apart from the consecration of passion and misfortune, there is little in his life to excite our sympathy. Viewed in connection with Heloise he must always interest us; viewed away from her, he presents the figure of a quick, vivacious, unscrupulous, intensely vain Frenchman. But, in several respects, he represents the philosophic struggle of the twelfth century; and in this light we may consider him.

He was born in Brittany in 1079, of a noble family, named Bérenger. The name of Abelard came to him later. His master laughingly noticed his superficial manner of passing over some studies, filled as he was with others, and said, 'When a dog is well filled, he can do no more than lick the bacon.' The word *to lick*, in the corrupt Latin of that day, was *bajare*, and *Bajolardus* became the cognomen of this 'bacon-licking student' among his comrades, which he converted into *Habelardus*, 'se vantant ainsi de posséder ce qu'on l'accusait de ne pouvoir prendre.'* In the ancient writers the name is variously spelled, as Abailardus, Abaielardus, Abaulardus, Abbajalarius, Baalaurdus, Belardus, and in French as Abeillard, Abayelard, Abalard, Abaulard, Abaalary Allebart Abulard, Beillard, Baillard, Balard, and even Esbaillart; which variations seem to imply that the

* CHARLES DE RÉMUSAT: *Abélard*, Paris, 1845, i. 13. This valuable monograph contains the fullest biography of Abelard and the best analysis of his works yet published. Indeed, before M. Cousin published the works of Abelard, in 1836, every account of the philosophy of this thinker was necessarily meagre and erroneous.

old French writers were as accurate in their spelling of their countrymen's names as their descendants are in spelling English and German names.

Abelard's father joined to his knightly accomplishments a taste for literature, as literature was then understood; and this taste became so dominant in the mind of the youth, that he renounced the career of arms altogether for that of learning. Dialectics was the great science of that day, almost rivalling in importance the Theology which it served and disturbed by turns. It was an exercise of intellectual ingenuity, for which this youth manifested surprising aptitude. He travelled through various provinces disputing with all comers, like a knight-errant of philosophy, urged thereto by the goading desire of notoriety. This love of notoriety was his curse through life. At the age of twenty he came to Paris, hoping there to find a fitting opportunity of display—an arena for his powers as a disputant. He attended the lectures of William of Champeaux, the most renowned master of disputation, to whom students flocked from all the cities of Europe. The new pupil soon excited attention. The beauty of his person, the easy grace of his manner, his marvellous aptitude for learning, and still more marvellous facility of expression, soon distinguished him from the rest. The master grew proud of his pupil, loved him through this pride, and doubtless looked on him as a successor. But it soon became evident that the pupil so quick at learning did not sit there merely to learn: he was waiting for some good opportunity of display, waiting to attack his venerable master, whose secret strength and weakness he had discovered. The opportunity came; he rose up, and in the midst of all the students provoked William of Champeaux to discussion, harassed, and finally vanquished him. Rage and astonishment agitated the students; rage and terror the master. The students were indignant because they clearly saw Abelard's motive.

Abelard dates the origin of all his woes from this occasion, when he created enmities which pursued him through life;

and, with a sophistication common to such natures, he attributes the enmities to envy at his ability, instead of to the real causes, namely his inordinate vanity and selfishness. For a time indeed the rupture with his master seemed successful. Although only two-and-twenty years of age, he established a school of philosophy at Melun, which became numerously attended, and spread his name far and wide. Emboldened by success, he removed his school still nearer to Paris—to Corbeil—in order, as he frankly tells us, that he might be more importunate to his old master. But his rival was still powerful, aged in science and respect. Intense application was necessary, and in the struggle Abelard's overtasked energies gave way. He was commanded by the physicians to shut up his school, and retire into the country for repose and fresh air.

In two years he returned to Paris, and saw with delight that his reputation had not been weakened by absence, but that on the contrary his scholars were more eager than ever. His old antagonist, William of Champeaux, had renounced the world, and retired to a cloister, where he opened the school of Saint-Victor, afterwards so celebrated. His great reputation, although suffering from Abelard's attacks, drew crowds. One day, when the audience was most numerous, he was startled by the appearance of Abelard among the students, come, as he said, to learn rhetoric. William was troubled, but continued his lecture. Abelard was silent until the question of 'Universals' was brought forward, and then suddenly changing from a disciple to an antagonist, he harassed the old man with such rapidity and unexpectedness of assault that William confessed himself defeated, and retracted his opinion. That retraction was the death of his influence. His audience rapidly dwindled. No one would listen to the minor points of Dialectics from one who confessed himself beaten on the cardinal point of all. The disciples passed over to the victor. When the combat is fierce between two lordly stags, the hinds stand quietly by, watching the issue of the contest, and if their former

lord and master, once followed and respected, is worsted, they all without hesitation pass over to the conqueror, and henceforth follow him. Abelard's school became acknowledged as pre-eminent; and, as if to give his triumph greater emphasis, the professor to whom William of Champeaux had resigned his chair was either so intimidated by Abelard's audacity, or so subjugated by his ability, that he offered his chair to Abelard, and ranged himself among the disciples.

Abelard was not content even with this victory. Although undisputed master in dialectics, he could not hear of any other teacher without envy. A certain Anselm taught Theology at Laon with immense success; and this was enough to trouble Abelard's repose; accordingly to Laon he went, ridiculed Anselm's style, laughed at the puerile admiration of the scholars, and offered to surpass the master in the explanation of Scripture. The scholars first laughed, then listened, and admired. Abelard departed, having excited anarchy in the school, and anguish in the heart of the old man.

His career, at this period, was brilliant. His reputation had risen above that of every living man. His eloquence and subtlety charmed hundreds of serious students, who thronged beneath the shadows of the cathedral in ceaseless disputation, thinking more of success in dispute than of the truths involved. M. Guizot estimates these students at not less than five thousand—of course not all at the same time. Amidst these crowds, Abelard might be seen moving with imposing haughtiness of carriage, not without the careless indolence which success had given; handsome, manly, gallant-looking, the object of incessant admiration. His songs were sung in the streets, his arguments were repeated in cloisters. The multitude reverentially made way for him as he passed; and from behind their window-curtains peeped the curious eyes of women. His name was carried to every city in Europe. The Pope sent hearers to him. He reigned, and he reigned alone.*

* 'Cum jam me solum in mundo superesse philosophum æstimarem.'—*Epist.* i. p. 9.

It was at this period that the charms and helpless position of Heloise attracted his desires. He resolved to seduce her; resolved it, as he confesses, after mature deliberation. He thought she would be an easy victim; and he who had lived in abhorrence of libertinage—*scortorum immunditiam semper abhorrebam*—felt that he had now attained such a position that he might indulge himself with impunity. We are not here attributing hypothetic scoundrelism to Abelard; we are but repeating his own statements. ‘I thought, too,’ he adds, ‘that I should the more easily gain the girl’s consent, knowing as I did to how great a degree she both possessed learning and loved it.’ He tells us how he ‘sought an opportunity of bringing her into familiar and daily intercourse with me, and so drawing her the more easily to consent to my wishes. With this view I made a proposal to her uncle, through certain of his friends, that he should receive me as an inmate of his house, which was very near to my school, on whatever terms of remuneration he chose; alleging as my reason that I found the care of a household an impediment to study, and its expense too burdensome.’ The uncle, Fulbert, was prompted by avarice, and the prospect of gaining instruction for his niece, to consent. He committed her entirely to Abelard’s charge, ‘in order that whenever I should be at leisure from the school, whether by day or by night, I might take the trouble of instructing her; and should I find her negligent, use forcible compulsion. Hereupon I wondered at the man’s excessive simplicity, with no less amazement than if I had beheld him entrust a lamb to the care of a famishing wolf; for in thus placing the girl in my hands for me not only to teach, but to use forcible coercion, what did he do but give full liberty to my desires, and offer the opportunity, even had it not been sought, seeing that, should enticement fail, I might use threats and stripes in order to subdue her?’*

The crude brutality of this confession would induce us to

* *Epist.* i.

suppose it was a specimen of that strange illusion which often makes reflective and analytic minds believe that their enthusiasm and passions were calculations, had we not sufficient evidence, throughout Abelard's life, of his intense selfishness and voracious vanity. History has no other such example of passionate devotion filling the mind of a woman for a dialectician. It was dialectics he taught her; since he could teach her nothing else. She was a much better scholar than he; in many respects better read. She was perfect mistress of Latin, and knew enough Greek and Hebrew to form the basis of her future proficiency. He knew nothing of Greek or Hebrew, although all his biographers, except M. Rémusat, assume that he knew them both: M. Michelet even asserting that he was the only man who did then know them.* In the study of arid dialectics, then, must we imagine Abelard and Heloise thrown together; and, in the daily communion of their minds, passion ripened, steeped in that vague, dream-like, but intense delight, produced by the contact of great intelligences; and, as the Spanish translator of her letters says, 'buscando siempre con pretexto del estudio los parages mas retirados'—they sought in the still air and countenance of delightful studies a solitude more exquisite than any society. 'The books were open before us,' says Abelard, 'but we talked more of love than philosophy, and kisses were more frequent than sentences.'†

In spite of the prudential necessity for keeping this intrigue secret, Abelard's truly French vanity overcame his prudence. He had written love-songs to Heloise; and, with the egotism of a bad poet and indelicate lover, he was

* He knew a few terms current in the theological literature of the day, but had he known more, his ostentatious vanity would have exhibited the knowledge on all occasions. He expressly declares, moreover, that he was forced to read Greek authors in Latin versions. See COUSIN'S edition of the *Œuvres inédites*, p. 43; also *Dialectica*, p. 200, where the non-existence of Latin versions is given as the reason of his ignorance of what ARISTOTLE says in his *Physics* and *Metaphysics*.

† *Epist.* i. p. 11. He adds, with his usual crudity: 'Et sæpius ad sinus quam ad libros reducebantur manus.'

anxious for these songs to be read by other eyes besides those for whom they were composed; anxious that other men should know of his conquest. His songs were soon bandied about the streets. All Paris was in the secret of his intrigue. That which a delicate lover, out of delicacy, and a sensible lover, out of prudence, would have hidden from the world, this coxcomb suffered to be profaned by being bawled from idle and indifferent mouths.*

At length even Fulbert became aware of what was passing under his roof. A separation took place; but the lovers continued to meet in secret. Heloise soon found herself pregnant, and Abelard arranged for her an escape to Brittany, where she resided with his sister, and gave birth to a son. When Fulbert heard of her flight, he was frantic with rage. Abelard came cringing to him, imploring pardon, recalling to him how the greatest men had been cast down by women, accused himself of treachery, and offered the reparation of marriage provided it were kept secret; because his marriage, if made known, would be an obstacle to his rising in the Church, and the mitre already glimmered before his ambitious eyes. Fulbert consented. But Heloise, with womanly self-abnegation, would not consent. She would not rob the world of its greatest luminary. 'I should hate this marriage,' she exclaimed, 'because it would be an opprobrium and a calamity.' She recalled to Abelard various passages in Scripture and ancient writers, in which wives are accursed, pointing out to him how impossible it would be for him to consecrate himself to philosophy unless he were free: how could he study amid the noise of children and domestic troubles of a household?—how much more honourable it would be for her to sacrifice herself to him! She would be his concubine. The more she humiliated herself for him the greater would be her

* That this vanity and indelicacy are eminently French, though unhappily not exclusively French, will be admitted by all who are conversant with the life and literature of that remarkable people. This national peculiarity had not escaped the piercing gaze and healthy instincts of MOLIÈRE, who has an admirable passage on it: see Arnolphe's monologue, act iii. scene 3 of *L'Ecole des Femmes*.

claims upon his love ; and thus she would be no obstacle to his advancement, no impediment to the free development of his genius.

‘ I call God to witness,’ she wrote many years afterwards, ‘ that if Augustus, the emperor of the world, had deemed me worthy of his hand, and would have given me the universe for a throne, the name of your concubine would have been more glorious to me than that of his empress : *carius mihi et dignius videretur tua dici meretrix quam illius imperatrix.*’

Gladly would Abelard have profited by this sublime passion ; but he was a coward, and his heart trembled before Fulbert. He therefore endeavoured to answer her arguments ; and she, finding that his resolution was fixed—a resolution which he very characteristically calls a bit of stupidity, *meam stultitiam*—burst into tears, and consented to the marriage, which was performed with all secrecy. Fulbert and his servants, however, in violation of their oath, divulged the secret. Whereupon Heloise boldly denied that she was married. The scandal became great ; but she persisted in her denials, and Fulbert drove her from the house with reproaches. Abelard removed her to the nunnery of Argenteuil, where she assumed the monastic dress, though without taking the veil. Abelard furtively visited her.* Meanwhile Fulbert’s suspicions were roused, lest this seclusion in the nunnery should be but the first step to her taking the veil, and so ridding Abelard of all impediment. Those were violent and brutal times, but the vengeance of Fulbert startled even the Paris of those days with horror. With his friends and accomplices he surprised Abelard sleeping ; and there inflicted that mutilation, which Origen in a moment of religious frenzy inflicted on himself.

In shame and anguish Abelard sought the refuge of a cloister. He became a monk. But the intense selfishness of the man would not permit him to renounce the world

* He adds, ‘ Nosti . . . quid ibi tecum mea libidinis egerit intemperantia in quadam etiam parte ipsius refectorii. Nosti id impudentissimè tunc actum esse in tam reverendo loco et summæ Virgini consecrato.’—*Epist.* v. p. 69.

without also forcing Heloise to renounce it. Obedient to his commands, she took the veil; thus once again sacrificing herself to him whom she had accepted as a husband with unselfish regret, and whom she abandoned in trembling, to devote herself henceforth without hope, without faith, without love, to her divine husband.

The gates of the convent closed for ever on that noble woman whose story continues one of pure heroism to the last; but we cannot pause to narrate it here. With her disappearance, the great interest in Abelard disappears; we shall not therefore detail the various episodes of his subsequent career, taken up for the most part with quarrels—first with the monks, whose dissoluteness he reproved, next with theologians, whose hatred he roused by the ‘heresy’ of reasoning. He was condemned publicly to retract; he was persecuted as a heretic; he had ventured to introduce Rationalism,—or the explanation of the dogmas of faith by Reason,—and he suffered, as men always suffer for novelties of doctrine. He founded the convent of Paraclete, of which Heloise was the first abbess, and on the 21st of April, 1142, he expired, aged sixty-three. ‘Il vécut dans l’angoisse et mourut dans l’humiliation,’ says M. de Rémusat, ‘mais il eut de la gloire et il fut aimé.’

There are two points of view under which the teachings of Abelard are of interest to us. The first is his attempt to emancipate Reason; the second his attempt to disengage the doctrine of Nominalism from the heretical disgrace under which it had fallen in the hands of Roscellinus.

Carrying out more boldly and more effectively the principle started by Erigena, he brought forward Logic as an independent power in the great arena of theological debate. *Ponit in cælum os suum*, says St. Bernard, with indignation, writing to the Pope, *et scrutatur alta Dei*. It was a dangerous and damnable imprudence; and drew on him from St. Bernard this terrible accusation: *transgreditur fines quos posuerunt patres nostri*; to have passed beyond the limits set by our forefathers is, in all ages and in all nations, to have

braved the reprobation of the timid and the old. Abelard braved it.

Supported, as he thought, by thousands of partisans, Abelard assumed an attitude of offence, almost of disdain. Unconscious of his real danger, he published the substance of his Lectures in a work called *Introductio ad Theologiam*, in which he undertook to demonstrate by Reason the dogmas of Faith, and promulgated the then audacious opinion, that all dogmas should be presented under a rational form. That this was very far from being acceptable, may be read not only in his condemnation, but also in the passage of his *Dialectica*, where he says that his rivals declared it not permissible in a Christian to treat even of Dialectics, because Dialectics was not only incapable of instructing any one in the faith, but disturbed and destroyed faith by the complication of its arguments.*

This commencement, feeble though it may have been, marks a new epoch in the development of speculation. The struggle of Reason against Authority, which was reopened by Abelard, has not yet closed. 'My disciples,' he says in his Introduction, 'asked me for arguments drawn from philosophy such as reason demanded, begging me to instruct them that they might understand and not merely repeat what was taught them; since no one can believe anything until he has first understood it; and it is ridiculous to preach to others what neither teacher nor pupil understand.'

Not content with this revolutionary principle, Abelard further 'transgressed the limits of his forefathers' by the composition of the treatise *Sic et Non*,† the object of which was to cite the passages of Scripture and the Fathers *pro* and *con.* upon every important topic: this collocation of contradictory statements given by the highest possible authorities was meant, as Abelard distinctly informs us,

* *Dialectica*, p. 434.

† It is printed in Cousin's edition, but with omissions. The entire work was published in Germany, 1841, under this title: *Petri Abaelardi Sic et Non; primum integrum ediderunt E. L. Henke et G. S. Lindenköhl.* This is the edition I use.

to train the mind to vigorous and healthy doubt, in fulfilment of the injunction, 'Seek, and ye shall find; knock, and it shall be opened unto you.' 'Dubitando enim ad inquisitionem venimus; inquirendo veritatem percipimus; juxta quod et Veritas ipsa *Quærite*, inquit, *invenietis*; *pulsate*, et *aperietur vobis*.'* Whatever his intention may have been, the result of such a work was clearly foreseen by theological teachers, who regarded doubt as damnable, and would not tolerate it under the plausible aspects of intellectual gymnastics, or the love of seeking for truth. But theologians were unable to arrest the development of speculation. Doubt began; disputation waxed stronger; logic played like lambent flame around the most sacred subjects; Scholasticism entered every city in Europe, and filled it with subtle disputants.

During the centuries which succeeded, the question of Nominalism was constantly in debate; and beside it many others so remote, and, to modern apprehensions, so frivolous, that few historians boast of more than superficial acquaintance with mediæval philosophy, and few mention it without scorn. To name but one topic, what does the reader think of a debate *utrum Deus intelligat omnia alia a se per ideas eorum, an aliter*? What does he think of men wasting their energies in trying to convince each other of the true process by which God conceived ideas—discussing, with ardour and unmisgiving ingenuity, topics which are necessarily beyond all possible demonstration? Nevertheless, absurd as such discussions were, they have found, even in modern times, legitimate successors; and the laborious futility of the Schoolmen has been rivalled by the laborious futility of German metaphysicians.

§ IV. THE GREAT DISPUTE.

The second point to which Abelard calls our attention, is the dispute which agitated the schools during the whole

* Page 17 of the edition last named.

Middle Ages, the dispute as to the nature of Genera and Species, which M. de Rémusat truly says is the longest, most animated, and certainly the most abstract controversy, that has ever agitated the human mind, and the one which now seems the least likely to have interested men so deeply. The secret of this interest is the theological bearing which the question early received. It had been debated in Greece as an abstract question. It was now debated as one deeply implicating the dogmas of Faith.

M. Cousin is guilty of but a slight exaggeration, when he says that the whole Scholastic Philosophy issued out of a phrase in Porphyry, as interpreted by Boethius. This is the passage in Boethius: 'The object of Porphyry in this work, is to prepare the mind for the easy understanding of the Predicaments, by treating of the five things or words, (*tractando de quinque rebus vel vocibus*), namely, genus, species, difference, property and accident; the knowledge of which leads to the knowledge of the Predicaments.' By the phrase *rebus vel vocibus*, he was understood to signify that things and words were mutually convertible, to discourse of one was to discourse of the other. But is this so? Does the word Genus, or the word Species, represent an actual something which exists objectively, or is it merely a name which designates a certain collection of individual things? Centuries had passed without any one perceiving more than a grammatical or logical importance in the alternative. 'On ne l'entrevit guère qu'au milieu du onzième siècle. Mais à peine livré à l'examen, les deux solutions contraires qu'il présentait se partagèrent les esprits; et bientôt, agité en tous sens et fécondé à la fois par la témérité et par la sagesse, il en sortit à la fin du onzième siècle, et surtout au commencement du douzième, la philosophie scolastique dans toute son originalité et sa grandeur.'*

Roscellinus, whose name has descended to us as the first advocate and martyr of Nominalism, but of whose opinions

* COUSIN: *Œuvres inédites d'Abélard*. Introd.

we have only the reports of adversaries, *may* have held the extreme opinion, which is attributed to him, namely, that Universals were only names; he certainly denied their objective existence, denied that there existed a thing 'colour,' apart from coloured things, a thing, 'animal,' apart from animals, and denied that there was any real existence which was not an individual. When I say that Roscellinus may have held the opinion attributed to him, I wish to be understood as speaking doubtfully, because although it seems almost inconceivable that an acute mind could believe in so crude an opinion, which implies that names are mere breath, *flatus vocis*, and not also signs of ideas; and this difficulty is heightened by the fact that we have not his words whereby to judge him, but only the language adversaries put into his mouth; nevertheless, the history of Philosophy abounds in instances of even acute minds being thoroughly subjugated by verbal distinctions, and it is quite possible that Roscellinus, in seeing the error of Realism, saw nothing more than names in general terms, and overlooked the fact that these names stood for general ideas. Unless he did overlook this, the modification of Nominalism which Abelard introduced, and which has since been known as the third opinion on the question, and named Conceptualism (a purely verbal modification), is a mere subterfuge.

Those who believed with Plato, that general terms had correspondent objective existence, might have more readily listened to the Aristotelian refutation, and more willingly acquiesced in the argument of Roscellinus, which reduced general terms to mere names, had there not been a vista of heresy in this argument. Roscellinus, with unhesitating logic, showed that the three persons of the Trinity were incompatible with the unity of real existences: either the three persons existed separately and individually, and were one only in name, having a common resemblance of nature; or else the three persons form but one God; in which case God exists alone, without distinction of persons.

That such a conclusion should startle the world, and call

forth the thunders of the Church, will surprise no one. Roscellinus was summoned to appear before the council, and public abjure his errors (1093). He did so; not convinced that they were errors, but convinced that the people of Reims thought so, and thinking so were ready to massacre him. 'Telle était alors l'énergie de la foi chez les simples,' says M. Hauréau, 'tel était le discrédit populaire de la raison !' But surely a logical process, which carried men to such unpleasant conclusions, would always have been in discredit? Men were not willing to give up their dogma of the Trinity; and any logic which called upon them to do so would be answered with brick-bats. If Roscellinus persuaded a few hardy thinkers to adopt his opinion, they prudently kept silent; and that pleasant writer, John of Salisbury, alluding to it some years afterwards, adds, 'sed eorum jam explosa sententia est, et facilè cum auctore suo evanuit.*' Realism was again ascendant. It had an imperfect foundation in logic, but it was, or seemed to be, favorable to the Trinity, and that consecrated it.

The first great adversary of Roscellinus was Anselm of Canterbury, whose works have already been mentioned. His treatise *De Fide Trinitatis* is directed against Nominalism, and his arguments have satisfied many moderns; they have moreover given M. Cousin an opportunity of displaying that rhetorical clap-trap which so often makes his writings odious.†

The next great Realist was William of Champeaux, and

* JOANNES SARISBERIENSIS: *Polycraticus*, vii. 12. Comp. his *Metalogicus*, ii. 17. *Opera Omnia*, ed. GILES, Oxon. 1848.

† 'Ainsi le genre humain n'est pas un mot, ou bien il faut prétendre qu'il n'y a réellement rien de commun et d'identique dans tous les hommes, que la fraternité et l'égalité de la famille humaine sont de pures abstractions, et que, la seule réalité étant l'individualité, la seule réalité est par conséquent la différence, c'est-à-dire [what logic!] l'inimitié et la guerre, sans autre droit que la force, sans autre devoir que l'intérêt, sans autre remède que la tyrannie; tristes mais nécessaires conséquences que la logique et l'histoire imposent au nominalisme et à l'empirisme, et qui soulèvent contre eux, avec le christianisme, le sens commun et la conscience du genre humain.' COUSIN: *Fragments de Philos. du Moyen Âge*, 1856, p. 117. The imbecility of this passage is artfully concealed in its rhetorical assumptions; but it is so characteristic of the writer (who has nevertheless done much for the history of philosophy) that I could not forbear citing it, for the sake of marking my disgust.

against him, as we have seen, arose Abelard ; not indeed to defend Roscellinus and his heretical Nominalism ; on the contrary, to disavow and refute him, but to replace the two opinions by a third. He adopted so much of Nominalism, that until recently he was always held (and I think justly held) to be a Nominalist. Buhle points out that Abelard is a Nominalist when combating William, and a Realist when attacking Roscellinus.* M. Rousselot argues at great length that Abelard was in truth a Realist ; † that as a logician he agreed with Roscellinus, reducing universals to general terms, but as a metaphysician he agreed with the Realists. A closer examination of the arguments, however, shows that Abelard was a Nominalist under a new name.

The peculiarity of his doctrine consists in the distinction of Matter and Form applied to genus and species. ‘ Every individual,’ he says, in a very explicit passage of the treatise *De Generibus et Speciebus*, printed by M. Cousin, ‘ is composed of matter and form, i.e. Socrates from the matter of Man, and the form of Socrativity ; so Plato is of the same matter, namely, that of man, but of different form, namely, that of Platonity ; and so of all other individual men. And just as the Socrativity which formally constitutes Socrates is nowhere but in Socrates, so the essence of man which sustains Socrativity in Socrates, is nowhere but in Socrates. The same of all other individuals. By species, therefore, I mean, not that essence of man which alone is in Socrates, or in any other individual, but the whole collection which is formed of all the individuals of the same nature. This whole collection, although essentially multiple, by the Authorities is named one Species, one Universal, one Nature ; just as a nation, although composed of many persons, is called one. Thus each particular essence of the collection called Humanity is composed of matter and form, namely, the animal is matter, the form is, however, not one, but many, i.e. rationality, morality, bipedality, and all the other sub-

* BUHLE, *Gesch. der neuern Phil.* I. 840.

† ROUSSELOT, *Études sur la Philosophie dans le Moyen Âge*, 1840, II. 33, et seq.

stantial attributes. And that which is said of man, namely, that the part of man which sustains Socrativity is not essentially the part which sustains Platonity, is true also of the Animal.* For the Animal which in me is the form of Humanity, cannot essentially be elsewhere; but there is in it something not different from the separate elements of individual animals. Hence, I call Genus the multitude of animal essences which sustain the individual species of Animal: the multitude diversified by that which forms Species. For this latter is only composed by a collection of essences which sustain individual forms; Genus, on the contrary, is composed by a collection of the substantial differences of different Species. . . . The particular essence which forms the Genus Animal, results from a certain matter, essence of body, and substantial forms, animation and sensibility, which can only exist essentially there, although they take indifferently the forms of all species of body. This union of essences produces the Universal named Animal Nature.†

From this passage, and many others to the same effect might be cited, it is clear that if Nominalism be understood as proclaiming Universals to be only general names, *flatus vocis*, and not also general conceptions based on something real, expressing the resemblances and relations of things—an interpretation it is difficult to accept—Abelard separated himself from the Nominalists, and maintained the existence of universals *post rem*, though not *ante rem* and not *in se*—as when a multitude is conceived under the form of unity linking together the resemblances existing between the individuals composing it. But this reality of conceptions, which is the point advanced in Conceptualism, though it sometimes looks like the doctrine of Realism, and enabled

* We must subjoin the original: 'Et sicut de homine dictum est, scilicet quod illud hominis quod sustinet Socratitatem, illud essentialiter non sustinet Platonitatem, ita de animali. Nam illud animal quod formam humanitatis quæ in me est, sustinet, illud essentialiter alibi non est, sed illi non differens est et singulis materiis singulorum individuorum animalis.'

† *De Generibus et Speciebus*, p. 524.

Abelard to use equivocal language which has misled even M. Rousselot, is such as every Nominalist may accept. Abelard maintains that Genus and Species are not general existences, objectively real, existing integrally in various individuals whose identity admits of no other diversity than that of modes or accidents; otherwise the subject of these accidents, the substance of these modes being identical, every individual would possess the same substance. Humanity would thus only be one man; Socrates being at Athens, Humanity would be at Athens; and Plato being at Thebes, Humanity would then either not be at Athens with Socrates, or Plato would not be a man.

M. Hauréau* seems to me correct in saying that when Abelard appears to be defending Realism against Roscellinus, it is merely on the surface; he does not think what he seems to say; nothing is more repugnant to him than that doctrine; but Nominalism having an ill name, he has to advance cautiously. All that he really advances against Roscellinus is that Genus and Species are more than words, words being signs of conceptions. How these conceptions are formed by abstraction is very explicitly stated in his treatise *De Intellectibus*.† It is true that to give an air of independence to his position, and protect himself against the accusation of Nominalism, he stoutly affirms that words are nothing, whereas Genus and Species are things, substances. But what things?—what substances? ‘Il est trop ami de l’équivoque,’ says M. Hauréau, ‘pour s’expliquer davantage à ce sujet quand rien ne l’exige.’

In spite of the equivocation, or rather in consequence of it, Conceptualism, which was Nominalism under a new name, found great favour: the more so when men discovered that if Nominalism led to heretical views of the Trinity, Realism necessarily led to Pantheism, or the identification of all substances in one substance. But the battle continued to rage

* HAURÉAU: *De la Philos. scolastique*, I. 281.

† Printed by M. COUSIN in his *Fragments philos.* Comp. RÉMUSAT: *Abélard*, I. 495, and HAURÉAU, I. 283.

with varying fortunes throughout the Middle Ages, and the Church in turn condemned both. Nominalism was repeatedly dragged before the councils and condemned. Realism also was found to shelter monstrous heresies. In endeavouring to prove the existence of God, the school of Anselm was found almost to have denied that existence, to have merged it in Pantheism. 'Et si l'on ne se hâte de fermer les chaires où sont développées de telles conclusions, c'en est fait de tout dogme, la morale chrétienne n'a plus elle-même de fondement, et la plus abhorrée de toutes les hérésies, celle qui eut pour auteurs les plus mal famés des gnostiques, triomphe au douzième siècle de l'église et de la foi ! Les bûchers s'allument pour recevoir ces audacieux interprètes de la formule réaliste.' *

At the close of the XIIth century liberty of thought seemed vanquished. All the philosophical schools had in turn been condemned as heretical ; and each was eager to secure the condemnation of the other. Disgusted with their quarrels, with the futility of their principles, a party arose which turned the sharp edge of logic against them all and proclaimed the vanity of rational research. Of these an excellent representative may be seen in John of Salisbury, who lashes the logical follies of the age with a vigour which makes him interesting to our own age.† He refused to admit that idle disputes about words, and debates about generals and particulars, were philosophy at all. In his treatise, *Polycraticus*, he appeals to the nobler philosophy of Christian moralists against this vain array of logical formulas ; he objects to the deductive method so strikingly exhibited by Anselm, and so

* HAURÉAU, I. 215.

† JOANNES SARISBERIENSIS: *Metalogicus*, pp. 69, 73, 75, 77, ed. GILES. I have only room for one sentence: 'Fiunt itaque in puerilibus Academici senes ; omnem dictorum aut scriptorum exequuntur syllabam, imo et literam ; dubitantes ad omnia, quærentes semper, sed nunquam ad scientiam pervenientes ; et tandem convertuntur ad vaniloquium, ac nescientes quid loquantur, aut de quibus asserant, errores condunt novos, et antiquorum aut nesciunt aut dedignantur sententias imitari. Compilant omnium opiniones, et ea quæ etiam a vilissimis dicta vel scripta sunt, ab inopia judicii scribunt et referunt : proponunt enim omnia, quia nesciunt præferre meliora.'

destructively employed by Anselm's followers. And the Church applauded him. In fact, the struggles of the schools seemed about to end, as many other anarchical efforts have ended, in universal despotism. That which prevented so fatal a consummation, that which once more introduced the ferment of philosophic speculation into Europe, was the agitating influence of the Arabian commentators on Greek philosophy and science.

CHAPTER II.

ARABIAN PHILOSOPHY.

THE part due to Arabian influence in determining the evolution of European thought, giving a peculiar direction to culture which was in danger of languishing under the repressive despotism of Theology, is important, and not generally recognised; we are interested, therefore, in what *savants* tell us about these Arabian writers, especially of their leading tendencies. I will here rapidly set down the results of my own inquiries in this direction, giving references to sources where the curious reader will find ampler detail.

It is a common error to confound Mohammedan with Arabian, and then to feel surprise at the rapid transformation of an ignorant nomadic people, such as the Arabs were, into the splendid nation whose culture gave a mighty impulse to European progress. Even the learned Dozy seems to countenance this error when he says of the Arabs, ‘Ar-rachés par un prophète à leurs déserts et lancés par lui à la conquête du monde, ils l’ont rempli du bruit de leurs exploits; enrichis par les dépouilles de vingt provinces, ils ont appris à connaître les jouissances du luxe; par suite du contact avec les peuples qu’ils ont vaincus, ils ont cultivé les sciences, et ils se sont civilisés autant que cela leur était possible. Cependant même après Mahomet une période assez longue s’est écoulée avant qu’ils perdissent leur caractère national.’* Barbarians they were, and barbarians they long remained, in spite of their conquests.

* Dozy: *Histoire des Musulmans d’Espagne*. Leyden, 1861, i. 15.

There never was any Arabian Science, strictly speaking. In the first place, all the Philosophy and Science of the Mohammedans was Greek, Jewish, and Persian. In the next place, it was never, or very rarely, the Arabs who devoted themselves to such studies. One authority* has told us that what it is customary to call Arabian Philosophy forms but a small section of the Mohammedan movement, and was almost unknown even to the Mohammedans themselves. It really designates a reaction against Islamism, which arose in the distant parts of the empire, in Samarcand, Bokhara, Morocco, and Cordova. The Arabian language having become the language of the empire, this Philosophy is written in that language; but the ideas are not Arabian; the spirit is not Arabian. The real genius of that people is to be found in the Moallakat and the Koran; and is absolutely antagonistic to Grecian Philosophy. It is the genius of a Semitic race. That race has been moved to lyrical and prophetic expression, rarely to the severe abstractions of Science, or the delicate subtleties of Philosophy. None of the great names, except Al-Kendi, belong to Arabs, strictly so called. They are the names of Persians, Spaniards, and Jews. It was through the Persians, under the Abbassides, that Grecian thought was introduced into Islam. It was at Bagdad that Philosophy formed a home. The caliph, Al Mamoun, a representative of the Persian reaction, was its first great patron; Syrian Christians and the Magi were its promoters.

When the edict of Justinian drove the last of the Greek philosophers to seek a refuge in Asia, they found welcome in Persia. The Nestorians flying from Heraclius found hospitable protection under Kosroes. And thus it was, that when the Abbassides wished to illustrate their dynasty with the splendour of Letters, they found numerous Greeks, Christians, and Jews ready to aid them with Syriac and Arabian versions of the great Athenian and Alexandrian writers.†

No one doubts that the origin of Arabian Philosophy and

* ERNEST RENAN: *Averroës et l'Averroïsme*. Paris, 1862, p. 67.

† Compare MUNK: *Mélanges de Philosophie Juive et Arabe*. Paris, 1859, p. 313.

of European Scholasticism must be sought in the Alexandrian School, more particularly in the peripatetic modification impressed on that School by its later thinkers. Porphyry is more Aristotelian than Platonic; and Porphyry was regarded, both by East and West, as the representative of philosophic thought. The absolute dominion which for ten centuries was exercised by Aristotelianism was greatly indebted to the labours of the Alexandrian interpreters, Ammonius, Themistius, Syrianus, Simplicius, and Philoponus; and it was to them that Arabian Philosophy owed its material. The little that the Arabs knew of Plato—and it was very little—they gained through these peripatetic commentators. Few of Plato's works, according to Munk, were translated into Arabic, and the few versions that existed were not widely known. I find that Djemâl Eddin al Kifti, who in the thirteenth century wrote a 'Dictionary of Philosophers,' mentions, under the head of Plato, only the translations of the *Republic*, the *Laws*, and the *Timæus*; but he also, under the head of Socrates, cites passages from the *Crito* and *Phædo*.

That the Arabs attached themselves servilely to Aristotle, and paid little attention to Plato, is well known. The reasons usually deduced for this preference are, as Renan justly remarks, more plausible than solid. It was not owing to their more practical turn of mind; it was not owing to their more scientific disposition. It was not even *preference* at all; there could be no preference where there was no alternative for choice. The Arabs accepted the culture which was offered them; and Plato was *not* offered. Even Plotinus, whose views they liberally incorporated with their philosophy, is never mentioned by them.*

The Syriac versions of Aristotle, commenced in the days of Justinian, were rapidly multiplied by translations into Arabic. In the ninth century the Nestorian physicians, Isaak and his son, gave translations which were much renowned. In the tenth century, Ya'hya ben 'Adi and 'Isa ben Zara

* See MUNK, p. 240. RENAN, p. 71.

made new translations, and corrected those already extant. Some of these, according to Munk, are executed with remarkable care and accuracy. The debt which Europe owes to the Arabs for their preservation of Greek writings, and the stimulus impressed upon European curiosity by the ardour of their veneration, without which stimulus the Renaissance might never have come to pass, has long been recognised, and perhaps exaggerated. Another and less questionable debt is due to them for the ardour with which they prosecuted mathematical, astronomical, medical, and chemical studies. Alexandria produced not simply philosophers, but also men of science; and the Arabs were brought into contact with both, learning to venerate Ptolemy and Galen as well as Aristotle. Thus, if the Arabs helped to raise Aristotle on the despot's throne, they also furnished the irresistible weapons with which that throne was one day to be destroyed.

The aspect of learning in Christian Europe during the tenth century was piteous. Yet at that very period of darkness, Andalusia, under the Mohammedans, was the centre of light. It was the market where all the treasures of the East found ready sale; works composed in Persia and Syria were often known in Spain before they had been heard of in the East. The caliph had his agents at Cairo, Bagdad, Damascus, and Alexandria, all seeking for manuscripts.

It is to be borne in mind that the Arabs, although they conquered Spain, were too weak in numbers to hold that country in subjection otherwise than by politic concessions to the opinions and customs of the people. They were in a position not unlike that of the Normans in England: superior in military organization, but inferior in actual strength, and forced to respect their subjects. Hence they permitted Jews and Christians to retain their religious rites and daily customs. So successful was this policy of conciliation, that Christians and Mohammedans not only lived together amicably, but often intermarried. And it is worthy of note, that from Spain Arabian culture slowly penetrated Europe,

through France, by means of the wandering and adventurous Jews.

Andalusia in the tenth century is thus a star shining solitary amid the darkness. The passion for Science and Art had established there a toleration which seems surprising to moderns. Christians, Jews, and Mussulmans spoke the same language, sang the same songs, delighted in the same poems, thought the same thoughts. It is obvious that this toleration, and this passion for knowledge which could only be general where such toleration existed, are quite irreconcilable with the commonly received opinion of Mohammedan bigotry. The truth must be avowed; there is almost always something of indifference in toleration. Without moral indifference, or intellectual scepticism, impartiality is difficult. Very earnest belief is confident, and the confidence in truth brings intolerance of error. Culture must weaken the intensity of religious conviction, before it widens the capacity of religious emotion so far as to admit the possibility of another opinion being true, or of an erroneous opinion being without offence in the eye of Heaven. A sweetly serious and hopeful nature may believe that error is not sin; but it is only exceptional minds that can be at once fervent and tolerant. If therefore we find any section of the world of Islam tolerant, we may safely conclude that it was sceptical or indifferent. Now M. Renan has shown* that even in Mahomet's time there was little belief in the prophet except among a small circle of devoted followers; and that it was not until the twelfth century that Islamism finally triumphed over the undisciplined elements which had split it into sects, some of them almost openly avowing their infidelity; 'sectes secrètes à double attente, alliant le fanatisme à l'incrédulité, la licence à l'enthousiasme religieux.' Indeed, the Arab is said by those who have studied his character not to be of a religious disposition; and in this he differs greatly from the other races that have adopted Islamism. 'Voyez les Bédouins

* RENAN: *Études d'Histoire religieuse*, 3rd ed. Paris, 1858, pp. 257-266.

d'aujourd'hui,' says Dozy. 'Quoique musulmans de nom, ils se soucient médiocrement des préceptes de l'Islamisme. Le voyageur européen qui les a connus le mieux atteste que c'est le peuple le plus tolérant de l'Asie.'* More than a century after Mahomet the Arabs in Egypt were ignorant of what the prophet had forbidden.† The religious fanaticism of Mohammedanism, which has aspects resembling our Puritanism, is traced by Dozy to the Berbers.

As Arabian Philosophy is nothing more than the Alexandrian interpretation of Aristotle, with occasional Oriental colouring, I shall not pause to expound the doctrines at any length; I am more desirous of indicating the kind and degree of scientific culture which was at one period so powerful in its influence on European thought. The readiest way of indicating this will be to bring forward the most eminent of the Arabian teachers.

§ I. AL-KENDI.

Our list opens with Al-Kendi, who flourished in the ninth century. He was the son of the governor of Coufa, under Haroun Al-Raschid. He studied at Bagdad and Bassora; and became famous, under the caliphs Al-Mamoun and Al-Mo'tacem, for works on philosophy, astronomy, mathematics, medicine, politics, and music. Learned in the learning of Persians, Indians, and Greeks, he was selected by the caliph as the man to translate Aristotle. Al-Kendi's commentaries on the Stagirite are rarely cited by Arab writers; and hence we may conclude they had been greatly surpassed by succeeding commentators.

In the detached notices which reach us of these Arabian thinkers, we often seem to meet with opinions greatly in advance of the culture of the time. But it would be necessary to have much more circumstantial statements before we could rely on such inferences, a verbal agreement often

* Dozy: *Op. cit.* I. 20.

† *Ibid.* p. 37.

masking profound divergences of thought. When, for example, we hear of Al-Kendi having composed a treatise to show that Philosophy was based on Mathematics, and could not be understood without Mathematics, we seem to read an agreement with the most advanced school of modern thinkers; yet, if we had Al-Kendi's work before us, we should probably find that his view of the relation of Mathematics to Philosophy was altogether unlike the modern. Roger Bacon, a disciple of the Arabs, also insisted on the primary necessity of Mathematics,* without which no other science can be known; yet by Mathematics it is clear that he meant something very different from what we mean, including under that head even dancing, singing, gesticulation, and performance on musical instruments.

§ II. AL-FARABI.

It was probably with no clearer insight that Al-Farabi treated Mathematics, gaining great celebrity. He was also famous as a physician (all the Arabs seem to have made Medicine a favourite study) and as a commentator on Aristotle. The date of his death—December, 950—seems all that can positively be fixed. Of his life, all that is authentically known is that he studied at Bagdad, and lived at Aleppo and Damascus. The details to be found in Leo Africanus and Brucker are rejected by Munk as untrustworthy. The chief of his writings were commentaries on Aristotle, especially on the *Organon*. And these we often meet with in citation. Roger Bacon and Albertus Magnus repeatedly quote them. Avicenna also avows himself greatly indebted to them; and so great were his obligations that readers gradually ceased to seek in Al-Farabi what they could find in Avicenna.

Among the works of Al-Farabi there was one on the Philosophy of Plato and Aristotle, of which some descriptions

* ROGER BACON: *Opus Magnus*, Venet. 1750, p. 43, and *Opera Inedita*, ed. BREWER, 1859, I. 105.

by Arabian writers still remain. It implied a knowledge of Plato greater than is found in other writers of that period. It contained an exposition of the various branches of philosophy and their mutual relations, an analysis of Plato's doctrine, with an indication of his works. This was followed by a more detailed account of Aristotle, with brief summaries of each of his treatises.

Al-Farabi's works on Music are said to have been greatly in advance of what had appeared before his time. One of them contained a complete theory of the art, treating of sounds, concords, intervals, rhythms, and cadence. In another he expounded the writings of the ancients, showing what progress had been made, correcting the errors of each writer, and supplying his omissions. Al-Farabi refuted the Pythagorean notion of music of the spheres. He also explained the influence of vibrations of the air upon instruments, and how the instruments ought to be constructed.*

§ III. AVICENNA.

Far more illustrious than any who had preceded him, Avicenna—or, to give him his real title, Abou-'Ali al'Hosein ben-'Abd-Allah Ibn Sîna—was born in one of the cities of Bokhara in August, 980. His family was Persian. At an early age he knew the Koran by heart, and was not a little admired for his precocity, especially in the studies of grammar and jurisprudence. To these he soon added mathematics, physics, logic, and metaphysics. Medicine followed, of course; and so marvellous was his precocity, that at the age of 17 he was appointed medical adviser to the Emir Nou'h-ben Mansour, whom he cured of a serious malady.

* None of the important works of Al-Farabi have been translated. The little volume published at Paris in 1638—*Alpharabii, vetustissimi Aristotelis interpretis, opera omnia quæ latina lingua conscripta reperiri potuerunt*—contains only two essays, I. *De Scientiis* (a sort of programme of the sciences), II. *De intellectu et intellecto*. Two other essays in the original, with Latin versions, were published by SCHMÖLDERS: *Documenta Philosophiæ Arabum*. Bonn, 1836.

The immense library of the emir was thus opened to his research. So eager and so ardent was his devotion to study, that he was accused of having set fire to the library, jealous lest another should share with him the knowledge he had gained there. An idle story.

After the death of his protector the emir, Avicenna quitted Bokhara, and extended his knowledge and his fame by visiting several great cities. He then composed his *Medical Canon*, which for centuries was the text-book of European schools, and is the one work by which he is known beyond his own country. He was soon again a wanderer. At Hamadan the emir raised him to the post of vizir. But the priests were offended, and instigated the soldiery to revolt. Avicenna was made prisoner, and his life was in danger. After some time spent in concealment, he was again able to reappear at court, and attend on the sick prince. It was at this period he composed his chief philosophical work, *Al-schefá* (which means *The Cure*; the Latin title is misleading).* And every evening he lectured on philosophy and medicine to a large and attentive audience. The lecture over, he ordered musicians to appear; and being of a festive disposition, fonder of the pleasures of the table than became a philosopher and physician, he rapidly undermined a constitution already enfeebled by over study. Avicenna was fond of wine, and on being reproached for his defiance of the Koran, replied, 'Wine is forbidden because it excites quarrels and bad passions; but I, being preserved from such excesses by my philosophy, drink wine to sharpen my intellect.'

It was a troubled life our philosopher led, crowded with excitement of various kinds. He was not content with lecturing and wine-bibbing, but must also take to conspiring. Thrown into prison, he escaped to Ispahan, where he found a new patron, with whom he passed a few years of toil and

* 'De his voluminibus,' says ROGER BACON, 'duo non sunt translata; primum autem et secundum aliquas partes habent Latini, quod vocatur *Assephæ*, i.e. Liber Sufficientiæ.'—*Opus Tertium*.

excitement, which terminated in 1037, in the fifty-seventh year of his age.

The immense productivity of the ancient philosophers is one of their most striking characteristics. Avicenna, whose brief career was also a troubled one, found time to be as voluminous as a Benedictine. Learned in all the learning of his time (which, however, was easily compassed), he composed more than a hundred works, some of which still survive.*

In the eleventh century he was to the Mohammedans of the East what, in the twelfth century, Averroes was to the Mohammedans of the West, and what Albertus Magnus was to Europe in the thirteenth century. Indeed, it is very probable, as M. Jourdain suggests,† that Albertus borrowed the plan of his own vast labours from Avicenna, who was not so much a translator or commentator of Aristotle, as the popularizer and propagator of his ideas. Like Albertus, he composed treatises on all the subjects treated by the Stagirite, often reproducing the expressions as well as the ideas of his model, but not unfrequently deviating into new tracks, either because he had misinterpreted the original, or because his own wider knowledge and clearer thought enabled him to improve it.‡ His least questionable improvements were in psychology. It is to Avicenna that the Arabs, and after them the Schoolmen, owe the classification of the faculties into exterior (the five senses), interior, motor, and rational.

The immense and enduring success of Avicenna's *Medical Canon* is a significant fact, when we reflect that he had not advanced the science in any one direction beyond the point

* A Latin version, published at Venice in 1495, under this title—*Avicennæ, peripatetici philosophi ac medicorum facile primi, opera in lucem redacta ac nuper, quantum ars niti potuit, per canonicos emendata*—contains *Logica*, *Sufficiëntia* (or, as we should style it, *Physica*), *De Cælo et Mundo*, *De Animâ*, *De Animalibus*, *De Intelligentis*, *Alpharabius de Intelligentis*, and *Philosophia Prima*.

† JOURDAIN: *Recherches sur les anciennes traductions latines d'Aristote*. Paris, 1843, p. 209.

‡ 'Princeps magnus, qui semper in libris sapientiæ vocatur princeps Abholati, ipse iterum revocavit philosophiam in Arabico, et exposuit opera antiquorum ROGER BACON: *Opus Tertium*, cviii. p. 24.

it had reached among the Greeks. Nay, in some respects it was even less advanced, for it servilely followed Aristotle in preference to Galen, and this, too, in simple matters of fact within easy verification; such, for example, as in assigning only three chambers to the heart. The Arabs could have no scientific pre-eminence over the Greek physicians, for they were by Mohammedan prejudices forbidden to practise human anatomy; and consequently physiology became a mere display of teleological ingenuity.

Sprengel asks how it is that the *Canon* came to secure and preserve its unquestioned supremacy in European schools, not being really superior to other Arabian works on the same subject. He finds an explanation in the systematic completeness of the work, and the indolent servility of the public, which was flattered by that cut-and-dried wisdom. 'These men,' he says, 'disliked novelties; accustomed in religious matters to obey without scruple the infallible dicta of the Church, it was agreeable to them to have an infallible authority in matters of science.'* Authority has always had great weight in Medicine; and the reason is because positive science plays so small a part in it. Where men cannot appeal to proofs, they must fall back on precedents; where they lack reasons there they quote authorities. Avicenna gratified the disposition to accept authority, and gratified the indolence which shrinks from laborious research. His dicta rendered research superfluous. Men were little given to independent thought in those days, when Science meant the knowledge of what other men had thought. The *Canon* contained the chief thoughts of Greek and Arabic sages; and men were thus saved even from the labours of erudition; for why should they have sought in the originals what this compendium so conveniently placed within easy reach? It was not until they began to think of interrogating Nature, instead of echoing the sages, that Avicenna's supremacy was disputed. And so naturally servile is the human intellect, so reluctantly does it withhold allegiance from a name which has once held

* SPRENGEL: *Gesch. der Arzneikunde*. Halle, 1823, II. 424.

authority, that even late in the sixteenth century we find Scaliger asserting that no man could be an accomplished physician who had not mastered Avicenna.

Following a chronological order, two names ought to be interposed here, Avicebron and Algazzali; but for purposes of exposition, I withhold these to a subsequent page, Algazzali being better understood in connection with Averroes, and Avicebron conducting us back to the scholastics.

§ IV. AL-HAZEN.

Al-Hazen ('Abou 'Ali al'Hasan ben al-'Hazen) was really a distinguished mathematician, who flourished during the early part of the eleventh century. He is best known in Europe by his treatise on *Optics*, translated by Risner, and published at Bâle in 1572. He therein corrected the Greeks, who supposed that rays of light issue from the eye and impinge on the objects; by anatomical and geometrical arguments, he shows that the rays come from the objects and impinge on the retina. He further explained the fact, that we see objects singly, though with two eyes, because the visual images are formed on symmetrical portions of the two retinas. He explains reflection and refraction; and astonishes us with his knowledge that the atmosphere increases in density as it decreases in height, and that the path of a ray of light through it, on entering obliquely, must be curvilinear and concave to the earth. Hence, as the mind refers the position of an object to the direction in which the ray of light enters the eye, the stars must appear to us nearer the zenith than they really are. Hence we see the stars before they have arisen and after they have set.*

§ V. AVEMPACE.

Avempace, as the West called Abou Beer Mohammed ben Ya'hya Ibn Badja, is one of the most celebrated of the Spanish Mohammedans. He flourished early in the twelfth century.

* It is eminently probable that KEPLER borrowed his optical views from AL-HAZEN. It is certain that he has no just title to originality as the discoverer, which is sometimes claimed for him.

He is the first of his compatriots in Spain who attained celebrity as a philosopher; and according to Ibn Tofail, his illustrious successor, he surpassed all contemporaries in depth of wisdom, although worldly affairs and a premature death prevented the completion of those important works which he had designed. He only published hastily written essays on Mathematics, Medicine, and Philosophy, and commentaries on Aristotle. One of his antagonists thought it a severe sarcasm to say that he only studied mathematical science, only meditated on the heavenly bodies and on the nature of climate, 'despising the Koran, which in his arrogance he sets aside.' The same critic, with the common candour of critics, says, 'According to him it is better to do evil than good, and that beasts are better guided than men.' Munk, who gives an analysis of one of Avempace's works,* says that he impressed on Arabian Philosophy a movement directly opposed to the mystical tendencies of Algazzali, and 'qu'il proclama la science spéculative seule capable d'amener l'homme à concevoir son propre être ainsi que l'intellect actif.'

§ VI. ABUBACER.

Early in the twelfth century appeared Abou Beer Mohammed ben-'Abd-al-Malic Ibn Tofail, known in Europe as Abubacer. He was born in Andalusia; and was renowned at the court of the Almohades for his skill as a physician and poet, and for his mathematical and philosophical learning. After having filled the office of secretary to the governor of Granada, he was appointed vizir and physician to Yousouf, the second king of the Almohade dynasty, who admitted him to great intimacy. His favour at court was honourably employed in protecting other *savants*, and it was he who presented Averroes to the king; showing a sublime superiority to any of those movements of jealousy which disturb inferior minds. One day, Yousouf expressed a desire to have a clear analysis of Aristotle's doctrine. Abubacer urged the task upon Averroes, instead of undertaking it

* MUNK: *Op. cit.* pp. 389-409.

himself. One likes to hear of the success of such men, and to know that his funeral was attended in person by the King Yacoub, surnamed Al-Mansour.

Abubacer was not only grateful to his predecessor, Avempace, but generous to his successor and rival, Averroes. I should be glad to believe that he was as profound as he was liberal. The evidence, however, will not warrant the conclusions of some modern admirers. I allude particularly to the claim which has been set up for him on the ground of his having, before Copernicus, rejected the Ptolemaic hypothesis. The rejection of an established error does not always imply uncommon insight. It is often due to impatient ignorance. Every year we see men ready to prove Newton's hypothesis a mistake; and if (the supposition is not very plausible) a truer hypothesis should some day replace that of Newton, these 'undevout astronomers' will clamorously assert their claims to priority. When, therefore, we are told that Abubacer rejected the Ptolemaic hypothesis, we must ask upon what grounds he rejected it, before we credit him with a deeper insight. Averroes, in his *Lesser Commentary on Aristotle's Metaphysics*, speaks of Abubacer's excellent views on the subject of epicycles; and Alpetragius, in his *Introduction to Astronomy*, says, 'You know that the illustrious Abubacer told us that he had found out an astronomical system and the principles of celestial motions different from those put forth by Ptolemy, and which need neither eccentrics nor epicycles; and on his system he said all movements are verified and no error results. He also promised to write on this subject.' But he did not write on it; and we are left to guess at his system, through the partial glimpses given in Averroes and Alpetragius. The basis of his objection to Ptolemy's hypothesis is that it is not in harmony with the theories of motion given by Aristotle! No man of scientific culture will be curious to hear more of a system which rests on that basis, except as a matter of historical interest; and in this direction we may notice the hypothesis proposed by Alpetragius:—'All the spheres follow the movement and the

impulsion of the superior sphere which is above that of the fixed stars and is void. They have but one movement from east to west; but according as they are distant from the superior sphere, their motion is less rapid, because they receive less of its impulse. Their apparent irregularity is thus explained, without the necessity of a retrograde motion from west to east. The different spheres have their particular poles, which incline from the poles of the superior sphere. Each, in following the diurnal movement of the superior, moves about its own poles. These two movements result in a sort of spiral, which makes the stars incline towards the north or south. There is thus no need of eccentrics nor epicycles.'

Alpetragius avows—and the avowal is very significant—that he was not led to this hypothesis by Observation, but by a kind of divine inspiration,* which is a process of discovery much in vogue among certain classes of speculators. Nor did he ever attempt to verify his hypothesis by calculation. Calculators are seldom inspired; indeed, one may observe that the minds most given to the rejection of conclusions, which, whether true or false, have been established on laborious induction and calculation, are the minds least impressed with the necessity of any higher verification than that of their 'intuitions;' they have the most serene reliance on their own sagacity. Alpetragius had therefor no hesitation in avowing, at the close of his treatise, that it would be impossible for him to imitate Ptolemy and enter upon all the details respecting celestial motions, for this would—occupy all his time!

Whatever may be thought of Alpetragius in our day, his hypothesis was long regarded as an immense contribution.

* 'Itaque excitavit me Deus omnipotens suo divino influxu ab alio quidem non tributo et experrectus sum à somno stupefactionis, et illuminavit oculos cordis mei ex perturbationis suis in eo quod nunquam ab aliquo cogitatum fuit, et ad id non perveni ex speculatione et discursu ingenii humani, sed ex eo quod placuit Deo ostendere sua miracula, et patefacere secretum occultum in theorica suorum orbium et notificare veritatem essentiæ eorum et rectitudinem qualitatis motûs.' Quoted by DELAMBRE: *Hist. de l'Astron. au Moyen Âge*.

His book was translated by Michael Scott. It was largely used by Albertus Magnus, Roger Bacon, and Vincent of Beauvais. In a treatise, written at the beginning of the fourteenth century, Isaac Israeli, a Jew of Toledo, speaks of it as the theory which agitated the whole world; although, he wisely adds, it was not worked out sufficiently to render it worthy of discussion: the system of Ptolemy could not be abandoned for an hypothesis which was not based on exact calculations. Another Jew, Levi ben Gerson, thought it worth while to refute Alpetragius, and to prove in detail how preposterous were his notions. How far the wide dissemination of the hypothesis, and the controversy it provoked, may have prepared the way for Copernicus, is an interesting question.

To return to Abubacer. He is widely known in Europe through his philosophical romance, *Philosophus Autodidactus*, in which he endeavours to trace the development of an intelligence unbiassed by society and its traditions and prejudices. His hero, Haï, is born on a desert island situated beneath the equator. In lieu of human parents, his generation takes place through certain physical conditions; which did not appear so preposterous in the eyes of Abubacer's contemporaries and successors as in the eyes of moderns; spontaneous generation being an universally accepted hypothesis in those days. Haï had a gazelle for his wet-nurse. The different periods of his development are marked by the successive advances which he makes in the comprehension of things. From the simple knowledge of sensible things, he gradually arrives at a conception of the world and its physical laws. Later on he recognises the unity which underlies variety. Things, though multiple in their accidents, are one in essence. He thus arrives at the knowledge of Matter and Forms. The first Form is Species. All bodies are united by corporeity, *i.e.* the corporeal Form.

Contemplating Matter and Forms, he enters the spiritual world. It is obvious that inferior objects are produced by something. There must, therefore, be a Producer of Forms,

since whatever is produced must have a producer. Directing his attention to the heavens, Haï sees a variety of celestial bodies which cannot be infinite. The celestial spheres are as one individual, and thus the whole universe is an entirety. Is this entirety eternal? Haï is unable to decide; but inclines to the belief that it is eternal. Be that as it may, he recognises an *agent* which perpetuates the existence of the world, and sets it in motion. This agent is neither a body nor a faculty of a body; it is the Form of the universe. All beings are the work of this Supreme Being; and our minds contemplating the beauty of the work necessarily ascend to its Creator, his goodness and perfection. All Forms are in him and issue from him; so that there is in truth no other Existence.

Haï now looks inwards. He finds that his intellect is absolutely incorporeal, since it perceives things divested of all quality—and this neither the senses nor the imagination are capable of doing. Therein lies the real essence of man, that which is neither born nor dies. The intellect is troubled by matter, and endeavours to disengage itself by giving to the body only such care as is indispensable to existence. Its beatitude and its pain are in a direct ratio to its union with God, or its distance from him. By ecstasy man unites himself with God. Then the universe appears to him only God, whose light is shed over all, but manifests itself in greater splendour in the purest beings. Multiplicity exists only for the senses. It disappears before the intellect which has disengaged itself from matter.

This romance acquired immense popularity. It has been translated into Latin, English, Dutch, and German,* and has disseminated Alexandrian and Arabian ideas in obscure quarters where otherwise they would never have penetrated.

* Pococke, in 1671, published the Arabic text with a Latin version: *Philosophus Autodidactus sive Epistola Abi Jaafur eln Tûfâil de Haï eln Yokdhan*. It was reprinted in 1700. There have been three English versions, the last by Ockley, under this title: *The Improvement of Human Reason, exhibited in the Life of Haï Ebn Yokdhan*, 1711. A German appeared in 1726: *Der von sich selbst gelehrtte Weltweise*; and another in 1783: *Der Natur-Mensch, oder Geschichte des Haï Ebn Yokdan*.

§ VII. ALGAZZĀLI.

We now turn back to the eleventh century again, to bring forward the name of an illustrious and independent thinker, Algazzāli, the 'Light of Islam,' the 'Pillar of the Mosque,' who is known under the names of Gazzali, Ghazali, Algazel, and was at one time familiar to European thinkers through the attacks of his adversary Averroes.*

Algazzāli (Abou-'Hamed-Mo'hammed ibn Mo'hammed Al-Ghazāli) was born in the city of Tous A.D. 1058. His father was a dealer in cotton-thread (*gazzal*), from whence he drew his name. Losing his father in early life, he was confided to the care of a Soufi. The nearest approach to what is meant by a Soufi is what we mean by Mystic. The influence of this Soufi was great. No sooner had the youth finished his studies, than he was appointed professor of theology at Bagdad, where his eloquence achieved such splendid success that all the Imams became his eager partisans. So great was the admiration he inspired, that the Mussulmans sometimes said, 'If all Islam were destroyed, it would be but a slight loss, provided Algazzāli's work on the "Revivification of the Sciences of Religion" were preserved.' This work, probably owing to its originality, was never translated into Latin during the Middle Ages, and remained a closed book to all but Arabian scholars until M. Schmölders published his version. It bears so remarkable a resemblance to the *Discours sur la Méthode* of Descartes, that had any translation of it existed in the days of Descartes, every one would have cried out against the plagiarism.

Like Descartes, he begins with describing how he had in vain interrogated every sect for an answer to the mysterious problems which 'disturbed him with a sense of things unknown;' and how he finally resolved to discard all authority,

* The most complete account of his life will be found in VON HAMMER: *O Kind! Die berühmte ethische Abhandlung Gasali's*, Vienna, 1838. MUNK: *Mélanges*, p. 366, and SCHMÖLDERS: *Essai sur les Écoles philosophiques chez les Arabes*, Paris, 1842. From my notice of this last-named work, in the *Edinburgh Review*, April 1847, I have incorporated some passages in the ensuing pages.

and detach himself from the opinions which had been instilled into him during the unsuspecting years of childhood. ‘I said to myself,’ he proceeds, ‘My aim is simply to know the truth of things; consequently it is indispensable for me to ascertain what is *knowledge*. Now, it was evident to me that *certain knowledge* must be that which explains the object to be known in such a manner that no doubt can remain, so that in future all error and conjecture respecting it must be impossible. Not only would the understanding then need no efforts to be convinced of certitude, but security against error is in such close connection with knowledge, that even were an apparent proof of its falsehood to be brought forward it would cause no doubt, because no suspicion of error would be possible. Thus, when I have acknowledged ten to be more than three, if any one were to say, “On the contrary, three is more than ten; and to prove the truth of my assertion, I will change this rod into a serpent;” and if he *were* to change it, my conviction of his error would remain unshaken. His *mancœuvre* would only produce in me admiration for his ability. I should not doubt my own knowledge.

‘Then was I convinced that knowledge which I did not possess in this manner, and respecting which I had not this certainty, could inspire me with neither confidence nor assurance; and no knowledge without assurance deserves the name of knowledge.

‘Having examined the state of my own knowledge, I found it divested of all that could be said to have these qualities, unless perceptions of the senses and irrefragable principles were to be considered such. I then said to myself, Now having fallen into this despair, the only hope remaining of acquiring incontestable convictions is by the perception of the senses and by necessary truths. *Their* evidence seemed to me indubitable. I began however to examine the objects of sensation and speculation, to see if they could possibly admit of doubt. Then doubts crowded upon me in such numbers that my incertitude became complete. Whence results the confidence I have in sensible things? The strongest of all

our senses is sight; and yet, looking at a shadow and perceiving it to be fixed and immovable, we judge it to be deprived of movement; nevertheless experience teaches us that, when we return to the same place an hour after, the shadow is displaced; for it does not vanish suddenly, but gradually, little by little, so as never to be at rest. If we look at the stars, they seem as small as money pieces; but mathematical proofs convince us they are larger than the earth. These and other things are judged by the senses, but rejected by reason as false. I abandoned the senses, therefore, having seen all my confidence in their truth shaken.

‘Perhaps, said I, there is no assurance but in the notions of Reason: that is to say, first principles, *e.g.* ten is more than three; the same thing cannot have been created and yet have existed from all eternity; to exist and not to exist at the same time is impossible.

‘Upon this the senses replied: What assurance have you that your confidence in Reason is not of the same nature as your confidence in us? When you relied on us, Reason stepped in and gave us the lie; had not Reason been there you would have continued to rely on us. Well, may there not exist some other judge superior to Reason, who, if he appeared, would refute the judgments of Reason in the same way that Reason refuted us? The non-appearance of such a judge is no proof of his non-existence.’

These sceptical arguments Algazzālī borrowed from the Grecian sceptics, and having borrowed them, he likewise borrowed from Grecian mystics, of the Alexandrian school, the means of escape from scepticism. He looked upon life as a dream.

‘I strove in vain to answer the objections. And my difficulties increased when I came to reflect upon sleep. I said to myself, During sleep you give to visions a reality and consistence, and you have no suspicion of their untruth. On awakening you are made aware that they were nothing but visions. What assurance have you that all you feel and

know when awake does actually exist? It is all true as respects your condition at that moment; but it is nevertheless possible that another condition should present itself which should be to your awakened state that which your awakened state now is to your sleep; so that in respect to this higher condition your waking is but sleep.'

If such a superior condition be granted, Algazzālī asks whether we can ever attain to participation in it. He suspects that the *Ecstasy* described by the Soufis must be the very condition. But he finds himself philosophically unable to escape the consequences of scepticism: the sceptical arguments could only be refuted by demonstrations. But demonstrations themselves must be founded on first principles; if *they* are uncertain, no demonstration can be certain.

'I was thus forced to return to the admission of intellectual notions as the basis of all certitude. This however was *not by systematic reasoning and accumulation of proofs, but by a flash of light which God sent into my soul.* For whoever imagines that *truth can only be rendered evident by proofs,* places narrow limits to the wide compassion of the Creator.'

Thus we see Algazzālī eluding scepticism just as the Alexandrians eluded it, taking refuge in faith. He then cast his eyes on the various sects of the faithful, whom he ranged under four classes.

I. The *Dogmatists*: those who ground their doctrine wholly upon reason.

II. The *Bastīnīs*, or *Allegorists*: those who receive their doctrine from an Imam, and believe themselves sole possessors of truth.

III. The *Philosophers*: those who call themselves masters of Logic and Demonstration.

IV. The *Soufis*: those who claim an *immediate intuition*, by which they perceive the real manifestations of truth as ordinary men perceive material phenomena.

These schools he resolved thoroughly to question. In the writings of the Dogmatists he acknowledged that their aim was realized—but their aim was not his aim:—'Their aim,'

he says, 'is the preservation of the Faith from the alterations introduced by heretics.' But his object was philosophical, not theological; so he turned from the Dogmatists to the Philosophers, studying their works with intense ardour, convinced that he could not refute them until he had thoroughly understood them. He did refute them, entirely to his satisfaction; * and having done so, turned to the Soufis, in whose writings he found a doctrine which required the union of action with speculation, in which virtue was a guide to knowledge. The aim of the Soufis was to free the mind from earthly considerations, to purify it from all passions, to leave it only God as an object of meditation. The highest truths were not to be reached by *study*, but by *transport*—by a transformation of the soul during *ecstasy*. There is the same difference between this higher order of truth and ordinary science, as between being healthy and knowing the definition of health. To reach this state it was necessary first to purify the soul from all earthly desires, to extirpate from it all attachment to the world, and humbly direct the thoughts to our eternal home.

'Reflecting on my situation, I found myself bound to this world by a thousand ties, temptations assailing me on all sides. I then examined my actions. The best were those relating to instruction and education; and even there I saw myself given up to unimportant sciences, all useless in another world. Reflecting on the aim of my teaching, I found it was not pure in the sight of the Lord. I saw that all my efforts were directed towards the acquisition of glory to myself.'

Thus did Philosophy lead him to a speculative Asceticism, which, calamity was shortly afterwards to transform into practical Asceticism. One day, as he was about to lecture to a throng of admiring auditors, his tongue refused utterance: he was dumb. This seemed to him a visitation of

* In the ninth volume of the works of AVERROES there is a treatise by ALGAZZALI, *Destructio Philosophorum*, which contains his refutation of the philosophical schools.

God, a rebuke to his vanity, which deeply afflicted him. He lost his appetite ; he was fast sinking ; physicians declared his recovery hopeless, unless he could shake off the sadness which depressed him. He sought refuge in contemplation of the Deity.

‘ Having distributed my wealth, I left Bagdad and retired into Syria, where I remained two years in solitary struggle with my soul, combating my passions and exercising myself in the purification of my heart, and in preparation for the other world.’

He visited Jerusalem, and made a pilgrimage to Mecca, but at length returned to Bagdad, urged thereto by ‘ private affairs ’ and the requests of his children, as he says, but more probably urged thereto by his sense of failure, for he confesses not to have reached the *ecstatic* stage. Occasional glimpses were all he could attain, isolated moments of exaltation passing quickly away.

‘ Nevertheless I did not despair of finally attaining this state. Every time that any accident turned me from it, I endeavoured quickly to re-enter it. In this condition I remained ten years. In my solitude there were revelations made to me which it is impossible for me to describe, or even indicate. Enough if, for the reader’s profit, I declare that the conviction was forced upon me that the Soufis indubitably walked in the true paths of salvation. Their way of life is the most beautiful, and their morals the purest that can be conceived.’

The first condition of Soufi purification is, that the novice purge his heart of all that is not God. Prayers are the means. The object is *absorption in the Deity*.

‘ From the very first, Soufis have such astonishing revelations that they are enabled, while waking, to see visions of angels and the souls of the prophets ; they hear their voices, and receive their favours. Afterwards a transport exalts them beyond the mere perception of forms, to a degree which exceeds all expression, and concerning which we cannot speak without employing language that would sound

blasphemous. In fact, some have gone so far as to imagine themselves to be *amalgamated with God*, others *identified with him*, and others to be *associated with him*. All these are sinful.'

Algazzālī refuses to enter more minutely into this subject; he contents himself with the assertion that whoso knows not Ecstasy knows prophetism only by name. And what is *Prophetism*? The fourth stage in intellectual development. The first, or infantile stage, is that of pure Sensation; the second, which begins at the age of seven, is that of Understanding; the third is Reason, by means of which the intellect perceives the necessary, the possible, the absolute, and all those higher objects which transcend the understanding.* After this comes the fourth stage, when another eye is opened by which man perceives things hidden from others—perceives all that will be—perceives things that escape the perceptions of Reason, as the objects of Reason escape the Understanding, and as the objects of Understanding escape the sensitive faculty. This is Prophetism. Algazzālī undertakes to prove the existence of this faculty:

'Doubts respecting Prophetism must refer either to its possibility or its reality. To prove its possibility it is only necessary to prove that it belongs to the category of objects which cannot be regarded as the products of intelligence: such, for example, as Astronomy or Medicine. For whoso studies these sciences is aware that they cannot be comprehended except by Divine inspiration, with the assistance of God, and not by experience. Since there are astronomical indications which appear only once in a thousand years, how could they be known by experience? † From this argument it is evident that it is very possible to perceive things which the intellect cannot conceive. And this is precisely one of the properties of Prophetism which has a myriad other properties; but these are only perceptible during Ecstasy by those who had the life of the Soufis.'

* KANT's three psychological elements, *Sinnlichkeit*, *Verstand*, *Vernunft*.

† O sancta simplicitas!

Algazzālī wrote a special treatise against the philosophers, in which he arraigns them under twenty heads, the most interesting to us being that of causality. ‘En somme,’ says M. Munk, ‘tout le raisonnement d’Al-Gazzālī peut se ramener à ces deux propositions :—1° Lorsque deux circonstances existent toujours simultanément, rien ne prouve que l’une soit la cause de l’autre : ainsi par exemple, un aveugle-né à qui on aurait donné la vue pendant le jour et qui n’aurait jamais entendu parler du jour ni de la nuit, s’imaginerait qu’il voit par l’action des couleurs qui se présentent à lui, et ne tiendrait pas compte de la lumière du soleil par laquelle les couleurs font impression sur ses yeux. 2° Quand même on admettrait l’action de certaines causes par une loi de la nature, il ne s’ensuit nullement que l’effet, même dans les circonstances analogues et sur des objets analogues, soit toujours le même ; ainsi le coton peut, sans cesser d’être le coton, prendre (par la volonté de Dieu) quelque qualité qui empêche l’action du feu, comme on voit des hommes, au moyen d’emplâtres faits avec une certaine herbe, se rendre incombustibles. En un mot, ce que les philosophes appellent la loi de la nature, ou le principe de causalité, est une chose qui arrive *habituellement*, parce que Dieu le veut, et nous l’admettons comme certain parce que Dieu, sachant dans sa prescience que les choses seront presque toujours ainsi, nous en a donné la conscience. Mais il n’y a pas de loi immuable de la nature qui enchaîne la volonté du Créateur.’*

I have given these arguments against causality partly to exhibit the style of thought which was considered powerful in those days, and partly to add one more to the many illustrations of historical misapprehension which the carelessness of writers propagates. Having read what Algazzālī taught, the reader will be somewhat amazed to find M. Renan saying of it : ‘Hume n’a rien dit de plus.’†

The influence of Algazzālī on Europe was null, but on the East it was immense ; as M. Munk says, it struck a blow at philosophy ‘dont elle ne pût plus se relever, et ce fut en

* MUNK : *Mélange*, p. 379.

† RENAN : *Averroës*, p. 74.

Espagne qu'elle traversa encore un siècle de gloire et trouva un ardent défenseur dans le célèbre Ibn-Roschd.' To him we now pass.

§ VIII. AVERROES.

Averroes (Aboulwalid Mo'hammed ibn Ahmed ibn Mo'hammed ibn-Roschd) was born at Cordova about 1120.

His family belonged to the most considerable in Andalusia, high in office, high in esteem. He was greatly befriended by Abubacer, and was intimate with the family of Avenzoar, his colleague at the court of Yousouf, during whose reign he continued in high favour and was employed in various important offices, so that his works were written amid continual interruptions. This favour seems to have been increased under Yousouf's successor, Yacoub Almansour, who was fond of discussing scientific and philosophic questions with him. Indeed Averroes occasionally so far forgot etiquette as to address his sovereign thus: 'Listen, O my brother!' Such intimacy naturally excited the jealousy of those less favoured, and perhaps by their machinations, or perhaps from some imprudence on his part, he suddenly fell into disgrace. The pretext was his heterodoxy. He was banished from Cordova, and his works were condemned to the flames—an exception being made in favour of the works on medicine, arithmetic, and elementary astronomy.

Almansour issued an edict declaring that God had ordained hell-fire for those who impiously asserted truth to be given by Reason alone. From such a sovereign such a declaration must be attributed to the kind of coercion exercised by priests over all but the most self-willed rulers. At any rate, the disgrace of Averroes was only temporary. The edict was rescinded, and Averroes recalled. But the end was near. He died at Morocco in 1198.

His disgrace and the accusations of heterodoxy greatly occupied the attention of contemporaries. Arabian Philosophy, introduced under Hakem in the tenth century, and cultivated with so much zeal, now began to struggle for existence against the religious fanaticism which was finally to suppress

it. The eternal contest between Reason and Faith, between free thought and despotic ignorance, had been growing fiercer every year; even Algazzālī had thrown himself by a flank movement against philosophy. The priestly party became strong enough to enforce its views even on sceptical Emirs, especially in times of political trouble, when the support of the ignorant multitude became of consequence. In Spain, as elsewhere, the mass of men cherish an instinctive dislike to philosophers, partly because early taught to dread Inquiry as inimical to Religion, and partly because the implied equality which exists between members of a church, where all alike share the blessings and the glory of illumination, is, in the presence of philosophers, rudely set aside, and replaced by an irresistible sense of inequality. The creed of the Bishop is the creed of the grocer. But the philosophy of that grocer is in no sense the philosophy of a Professor. Therefore it is that the Bishop will be revered where the Professor will be stoned. Intellect is that which man claims as specially his own; it is the one limiting distinction; and thus the multitude, so tolerant of the claims of an aristocracy of birth or of wealth, is uneasy under the claims of an aristocracy of intelligence.

The term philosophy is used by Mohammedans of our day as synonymous with infidelity, impiety, immorality. Nay, one finds this interpretation not altogether unknown in Europe, and that, too, in circles claiming a high degree of culture. In Spain, during the twelfth century, this interpretation became general. 'A theological reaction,' says M. Renan, 'analogous to that which in the Latin Church followed the Council of Trent, undertook to recover its ground by violence. Islamism, like all religions, has gone on strengthening itself and obtaining a more absolute faith from its adepts. The greater part of Mahomet's companions hardly believed in his supernatural mission; incredulity was rife during the first six centuries; but since then there has not been a doubt, not a protest. That has come to pass in Islamism and in Catholicism in Spain which would have

come to pass all over Europe if the religious movement at the close of the sixteenth and beginning of the seventeenth centuries had succeeded in arresting rational development.'

Aristotle became infamous in Islam; all the philosophers were proscribed, and their works destroyed. Hence it was that Averroes, who during four centuries was venerated by Jews, and highly esteemed by Christians, has left scarcely any trace on the minds of Arabs. Hence also the great rarity of his works in the original; while Hebrew and Latin versions abound in all great collections of manuscripts. The published Latin versions are very numerous. From 1480 to 1580, Renan tells us, scarcely a year elapsed without some new edition appearing. In Venice alone more than fifty editions were published, of which fourteen or fifteen are more or less complete.*

The claims of Averroes to European admiration were as a physician and a commentator on Aristotle. In the former character he was surpassed by Avicenna. Indeed we have only to learn that he followed Aristotle's teaching in preference to that of Galen, whenever the two were at variance, to indicate the slight reliance which can be placed on his medical knowledge. As a commentator he was unrivalled; and for a considerable period Philosophy in Spain and among the schoolmen may be defined thus: 'Nature interpreted by Aristotle, Aristotle interpreted by Averroes.'

The superstitious servility with which he accepted the dicta of the Stagyrice is indicated in the declaration that 'Aristotle initiated and perfected all the sciences, no writer before him being worthy of mention, no writer after him having, in the course of fifteen centuries, added anything of importance or detected any serious error.' Yet it is unanimously affirmed by modern scholars that Averroes, and the Arabian commentators generally, are far from faithful interpreters of Aristotle. They attach themselves in preference

* The editio princeps appeared at Padua in 1472. Towards the close of the 16th century the reprints became rarer; only a few of the medical works appeared. In the 17th century the dust began to settle on those once famous folios, from which it is never likely to be shaken.

to certain ideas obscurely indicated by the Stagyrite, and give these an undue prominence.

In three different works Averroes presented his master. 1. The *Great Commentary*, which gives each paragraph of the text, and interprets it sentence by sentence, introducing theoretical discussions as digressions. This form of commentary is peculiar to Avicenna, who borrowed it from that adopted in regard to the Koran. 2. The *Middle Commentary*, which merely cites the first words of the original paragraphs, and then weaves together text and interpretation after the manner of Avicenna—a form subsequently adopted by Albertus Magnus. 3. The *Third Commentary* is simply one of paraphrase and analysis, in which Averroes expounds the opinions of Aristotle as delivered in various treatises.

Error is long-lived. Averroes having once been named as the first who translated Aristotle from the Greek into Arabic, the statement has become stereotyped;* but there are three reasons against it. 1. Neither Averroes, nor any other Mohammedan in Spain, could read Greek.† 2. Arabic translations of Aristotle existed three centuries before the time of Averroes. 3. The Arabic versions of Greek writers were never made direct from the Greek, but from Syriac versions.

The barbarous jargon which the European schools had to master, when they opened the Latin versions of Averroes, may be imagined when it is known that these were Latin translations from a Hebrew version of an Arabic commentary on an Arabic translation of a Syriac version of a Greek text.

Averroes, like all the schoolmen and Arabians, exerted his ingenuity in discussing Matter and Form, substance and accident, virtual and actual, intellect and agent, but he added nothing to what was known in his day, although as the last

* MUNK and RENAN name some of the unsuspecting repeaters of this tradition : NIPHUS, PATRIZIO, MARC ODDO, BRUYERIN, SIGONIO, TOMASINI, GASSENDI, LONGUERUE, MORERI, D'HERBELOT, CASIRI, BUHLE, HARLES, ROSSI, MIDDELDORFF, TENNEMANN, DEGÉRANDO, JOURDAIN, and the *Conversations-Lexicon*.

† The ignorance of Averroes is pointedly shown by LUDOVICUS VIVES : *Opera*, i. 141. Bâle, 1555.

of the Arabs he had the reputation which often falls upon those who inherit what others invent. He exercised an important influence on the mind of Europe—especially on the development of that spirit of inquiry which Algazzālī had endeavoured successfully to discredit in the East, and which the Church was crushing in the West. The instinct of Theology early detected whither he tended; and Averroism became, as in later years Spinozism became, a synonym of infidelity. There are indeed several passages in which Averroes is explicit. I quote one given by Munk from the Hebrew version of the Commentary—a passage suppressed in the Latin version. ‘The religion peculiar to philosophers is the study of that which is; for no sublimer worship can be given to God than the knowledge of his works, which leads to the knowledge of him in his reality. That is the noblest action in his eyes; the vilest is taxing as error and vain presumption the effort of those who practise this worship, and who in this religion have the purest of religions.’ No wonder such a passage was suppressed! Here is another, which was not suppressed: ‘Among dangerous fictions we must count those which tend to regard virtue only as a means of arriving at happiness. This nullifies virtue; since the abstaining from vice is in the hope of being repaid with usury. The brave man will only seek death in order to escape a greater evil. The just man will respect the property of another only to acquire more.’ And alluding to the myths respecting a future world, he says: ‘These fables only serve to falsify the minds of the people, especially of children, without producing any real amelioration. I know men perfectly moral who reject all such fictions, and who are quite as virtuous as those who accept them.’

§ IX. AVICEBRON.

One of the writers who exercised most influence over the Christian thinkers of the thirteenth century was the author of the *Fons Vitæ*, known by the name of Avicebron, and

believed to be one of the Arabian philosophers, but now, thanks to the researches of M. Munk, proved to have been the renowned Jew, Ibn-Gebirol. He was contemporary with Avicenna, but his philosophical work seems to have been entirely neglected both by Arabs and Jews, and to have found its public among the Christians, who studied it so eagerly that the learned Jourdain declares a true knowledge of that period to be impossible to those unacquainted with the *Fons Vitæ*.^{*} The translation and analysis of this work given by M. Munk render it accessible to all.

The part played by the Jews as physicians,† merchants, bankers, has often been appreciated. The part played by them as thinkers is less frequently mentioned. Yet it has been considerable. Not to name their great monotheistic contribution, let us only pause for a moment on the three great names of Philo, Ibn-Gebirol, and Spinoza, all three departing from the doctrines taught in the Synagogue, all three teaching a doctrine profoundly opposed to Christianity, yet all three promulgating ideas that had an irresistible fascination overpowering even the repulsion their heterodoxy excited. Confining ourselves to the more special topic now before us — the Jews must be regarded as the chief instruments whereby the Arabian philosophy was made effective on European culture. Even in Spain the Jews were the chief students of this philosophy. ‘Dans le monde musulman comme dans le monde chrétien,’ says M. Munk, ‘les Juifs, exclus de la vie publique, voués à la haine et au mépris par la religion dominante, toujours en présence des dangers dont les menaçait le fanatisme de la foule, ne trouvaient la tranquillité et le bonheur que dans un isolement complet. Ignorés de la société, les savants juifs vouaient aux sciences un culte désintéressé.’

And as translators and transmitters of the Arabian culture they had varied opportunities. Hated and persecuted though they were, the ability and perseverance of the Jews made

^{*} JOURDAIN: *Recherches sur les traductions latines d'Aristote*, p. 197.

† Consult CARMOLY: *Hist. des Médecins juifs, anciens et modernes*, Bruxelles, 1844.

them everywhere necessary to princes and nobles. The common people, feeling no need of culture, and having no chance of borrowing money, indulged in unrestrained religious hatred; but the great pledged their estates to Hebrew money-lenders, and submitted their bodies to Hebrew physicians, while the learned, unsuspectingly, submitted their minds to Hebrew thinkers and translators. The facility with which the Jews mastered languages made them ready interpreters between Mussulman and Christian. It was through their translations, and through their original thinkers, such as Avicbron (Ibn-Gebirol) and Moses Maimonides, that the West became leavened with Greek and Oriental thought.*

The student who is tempted to open the *Fons Vitæ*, or to read M. Munk's analysis of it, will be struck with the 'familiar faces' of speculations which he has attributed to modern Germans, together with speculations of the Platonic and Peripatetic schools. I cannot afford the space necessary to any exposition of them.

In reviewing the labours of the Arabians we are struck with the facts that they were all men of high family, holding important positions; they were all surprisingly voluminous; they were all Aristotelians; they were all given more or less to science, especially to Medicine. Nevertheless, in spite of their advantage of position, in spite of their ardour, they left Science very much as they found it, and cannot be said to have advanced Philosophy. No germinal discoveries in Science are due to them. They improved

* M. MUNK is guilty of a strange oversight in saying that the scholastic dispute of Nominalism and Realism sprang from Arabian Aristotelianism (*Mélanges*, p. 335), for although it is perfectly true that ALBERTUS MAGNUS and THOMAS AQUINAS studied Aristotle in Latin versions made from Hebrew versions, it is no less true—as we have seen—that the scholastic quarrel began long before Arabian commentators were heard of. M. JOURDAIN (*Recherches*, p. 210), and M. RENAN (*Avicenne*, p. 175) assure us that there is no citation of any Arabian writer by the scholastics before the beginning of the 13th century. It is true that towards the middle of the 12th century GONDISALVI and others had translated certain writings, but they attracted no attention from nominalists or realists. In the 11th century the dispute had already developed all its leading characters.

instruments; they collected facts; they kept alive the sacred fire. But their labours were frustrated by their Method; and the only advantages the world received from them, were the preservation of what Grecian thought had achieved; and the scepticism which they impressed on European thought.

All the patronage of Emirs and Caliphs, all the efforts of philosophers, passed away without founding any large basis on which succeeding generations could build. In astronomy, in chemistry, in medicine, the Arabs made some subordinate improvements, largely enriching the store of observed facts, but they discovered no laws, they originated none of the germinal conceptions which act as impulses and regulators to research. The successors of the great Hipparchus had fatally neglected Observation; and the science he created languished in consequence. The Arabs, according to Delambre,* devoted their attention chiefly to Observation; and their failure is one among the many notable examples of the impotence of Observation, when undirected by a true Method, which should teach *what* is to be observed, and *how* to observe it. They had adopted the Mathematics of the Alexandrians; but unhappily they had also adopted the Metaphysics of the Alexandrians and the Astrology of the Chaldeans. Hence it was to such problems as the influences of the stars on the destinies of men, that they applied the glorious instrument of Trigonometry which had rendered Astronomy possible as a science. Moreover their superstitious reverence for Greek theories made progress impossible.

This did not thwart their influence on Europe. There are writers who question that influence, and who affirm that the Revival of Learning would have brought the Greek thinkers into the course of European evolution disengaged from the Arabian misapprehensions. But it seems to me that the intellectual condition of Europe at the close of the

* DELAMBRE: *Astronomie du moyen âge*, xxxix. 'Ils étaient devenus possesseurs de tous les écrits des Grecs, il était assez naturel qu'ils voulussent reconnaître par eux-mêmes l'exactitude de ces tables qui devaient servir à tous leurs calculs astronomiques et astrologiques.'

twelfth century was fast relapsing under a despotism which would have prevented the influence of Greek thought from taking effect, unless some other concurrent causes had been at work. It is quite true that the authority of Aristotle was never wholly lost, even during the darkest of the dark ages. It is true that a tradition of ancient glory survived, though the light itself was nearly extinct. But we must guard against exaggeration on this subject. It is misleading to assert, without qualification, that culture was never entirely lost, because a few monasteries preserved a few works of Greek and Latin writers which no one read. M. Jourdain says that throughout the Middle Ages Seneca's *Natural Questions*, Lucretius,* the philosophic works of Cicero, Apuleius, Cassiodorus, and Boethius were read. What then? Do these represent ancient culture? and were even these works appreciated?† The slight tincture of ancient learning which was preserved, had no chance against the massive ignorance of the clergy.

With respect to Aristotle, the discussions as to whether his writings were, or were not, made known to Europe through the Arabs may be considered finally settled by M. Jourdain. As a logician he was known; but not until the beginning of the thirteenth century, when his metaphysical and scientific works had been introduced by the Arabs, did he become *princeps philosophorum*, and estimated more than as a logician.

Besides the introduction of Aristotle, there was an agitating scepticism stimulated by the works of the Arabs, indirectly through their instigations to positive research, directly through the suggestion that all religions have a similar basis: so far from one alone possessing a divine origin, every other being

* I question whether LUCRETIVUS was much read before the Renaissance; his opinions must have been too offensive. I cannot find any evidence of his having been read. In ALCUIN's poem (quoted by HEEREN, *Gesch. d. class. Litt.* i. 132-3), where the authors then noted are named, Lucretius does not appear. In the Bobbio Catalogue his name occurs among the classic writers; but this is the only trace I have been able to find.

† Compare EICHHORN: *Allgemeine Geschichte der Cultur*, II. 54, 58; also the *Histoire littéraire de la France*, VI. 6. WHARTON: *Hist. of English Poetry*, I. Diss. 2. RÉMUSAT: *St. Anselm e de Cantorbéry*, p. 90.

the product of error and imposture, all are but the efforts of the human mind to solve the great mystery; and if one solution be more acceptable than another, it must reconcile its pretensions with human Reason. This idea, hazily present to the minds of several thinkers in earlier days, has of late years been rapidly growing into clearness and the authority of clearness. It could not have emerged unless there had been intimate or protracted communion between Christians, Jews, and Mohammedans. So long as nations were kept apart they naturally regarded each other's religion as a mass of absurd superstitions; no sooner was there an intellectual fusion than the agreement in ideas and sentiments, and the similarity in pretensions, became obvious to many sagacious intellects. It was in vain that orthodox Christians undertook to refute Judaism and Islamism: their very refutations were promulgations of the ideas attacked; they displaced the vain notions which had been held in horror or contempt, by definite notions which were not always seen to be so erroneous as the refuter affirmed. This is indeed the strategical mistake of all polemical Theology. Silence is the strongest fortress. When Theology attempts an answer, it appeals to Reason, and that appeal is often fatal to Faith. Theology is not founded upon Reason, and should seek no support in demonstration.

There had been scepticism before the thirteenth century, but no real incredulity; this doctrine, and that doctrine, had been disputed, rejected; but the foundation of Christian doctrine had never been touched. It was the foundation which was reached when the idea was reached that all religions have a common ground. This was in the thirteenth century, and may be traced to Arabian influence. The conception of Mahomet as a prophet and founder of a monotheistic creed, led to the conclusion that there were three religions founded on analogous principles, and all three mingled with fables. It was this which originated the myth of the work *De tribus Impostoribus*.*

* RENAN: *Averroës*, p. 224. 'C'est ici l'idée incrédule par excellence; comme toutes les idées nouvelles, elle correspondit à un agrandissement de la connais-

The introduction of Arabian writings divides the history of the Middle Ages into two markedly distinct epochs. In the first epoch Philosophy was not only servile to the Church, it was without materials, and without a Method. It lived upon the scanty remains of ancient learning, such as were contained in the compilations of Martianus Capella, Bede, and Isidore of Seville. In the second epoch a vast accession of material, in the works of Aristotle and the Alexandrians commented by the Arabians, prepared the way for the positive Method.

Before glancing at this second epoch, it will be well if we open Isidore of Seville's Encyclopædia, the *Etymologiarum libri XX.*, as an index of the culture of ages when abridgments replaced research, and when the explanation of terms was held to be knowledge. For several centuries this was the text-book; and the reader, on learning the nature of its contents, will doubtless share the surprise I felt on first becoming acquainted with it, in my eagerness to gain some definite idea of the culture of those times.

The first book is on Grammar. In thirty-nine chapters Isidore skims over this great topic, which in those days had supreme importance, and not a single observation of the slightest value escapes him. He is content to give a verbal explanation of grammatical terms without one philosophical rule. Four chapters on Fable and History succeed. As samples of his treatment of these subjects, I quote two of these chapters below.* No amount of description will convey a better idea of the work.

sance de l'univers. . . . Quel ébranlement pour les consciences, le jour où l'on s'aperçoit qu'en dehors de la religion que l'on professe, il en est d'autres qui ne sont pas entièrement dénuées de raison !' Among literary curiosities this (imaginary) work *De tribus Impostoribus* is certainly one of the most instructive. Its authorship has been confidently assigned to various writers, including the sceptical emperor Frederick II. Its abominable doctrines have elicited eloquent refutations and indignant protests. And now the proof is overwhelming that there never was such a work at all.

* CAP. xli. *De Historia.* Historia est narratio fei gestæ, per quam ea, quæ in præterito facta sunt, dignoscuntur. Dicta autem græce historia ἀπὸ τοῦ ἱστορεῖν, id est a *videre* vel *cognoscere*. Apud veteres enim nemo conscribebat historiam nisi is qui interfuisset, et ea, quæ conscribenda essent, vidiasset. Melius enim oculis quæ fiunt deprehendimus quam quæ auditione collegimus. Quæ enim videntur

The second book, consisting of thirty-one brief chapters, treats of Rhetoric and Dialectics in the same meagre style. The third book, of seventy-one chapters, expounds the four mathematical sciences then studied, Arithmetic, Geometry, Music, and Astronomy. They will be opened with some eagerness by the student anxious to learn what was known and thought on these subjects; but a few pages will allay that eagerness. True to the principle of giving verbal explanations of the various terms current in these sciences, the worthy Bishop never deviates into philosophy, except in such passages as that on the power of music,* or the brief yet interesting remarks on Astrology as superstitious.† How completely the magnificent labours of Hipparchus and Ptolemy had vanished from the scene, how utterly their results and methods had passed away, may be estimated on finding Isidore, in his chapter on the size of the sun and the moon, unable to give more precise information than that the sun is larger than the earth, and the moon less than the sun.

The fourth book is on Medicine, and consists of thirteen chapters of etymology. The fifth book, strangely enough, combines Legislation and Chronology! The sixth treats of Scripture canons, of Libraries, of Books, Bookbinding,

sine mendacio proferuntur. Hæc disciplina ad grammaticam pertinet: quia quidquid dignum memoria est, literis mandatur. Historiæ autem ideo *monumenta* dicuntur, quod memoriam tribuunt rerum gestarum. *Series* autem dicta per translationem a sortis florum, invicem comprehensorum.

CAP. xliii. *De utilitate Historiæ.* Historiæ gentium non impediunt legentes in iis, quæ utilia dixerunt. Multi enim sapientes præterita hominum gesta ad institutionem præsentium historiis indiderunt. Siquidem et per historiam summa retro temporum annorumque supputatio comprehenditur: et ea per consulum regumque successum multa necessaria perscrutantur.—*Opera*, ed. AREVALI, Rome, 1795, 7 vols. 4to., iii. 73.

* *Op. cit.* p. 133.

† CAP. xxvii. *De differentia Astronomiæ et Astrologiæ.* Inter astronomiam autem et astrologiam aliquid differt. Nam *astronomia* conversionem cœli, ortus, abitus, motusque siderum continet, vel qua ex causa ita vocentur. *Astrologia* vero partim naturalis partim superstitiosa est. *Naturalis*, dum exequitur solis et lunæ cursus, vel stellarum certasque temporum stationes. *Superstitiosa* vero est illa quam mathematici sequuntur qui in stellis augurantur, quique etiam duodecim signa per singula animæ vel corporis membra disponunt, siderumque cursu nativitates hominum et mores prædicere conantur.—P. 144.

Writing materials, and the determination of Easter. The seventh of God, Angels, Prophets, and Monks. The eighth of the Jews and their sects—among which there is a piquant mention of the heretics named *Hemerobaptistæ*, who carried the notion of cleanliness being akin to godliness to the absurd length of washing their clothes and bodies daily! * The list of Christian heretics, which succeeds, is interesting from the minuteness of the enumeration, though nothing can be more meagre than the indication of their opinions.

The ninth book treats of Languages, the Names of nations, and of Civil and Military Titles. The tenth is an alphabetical array of etymologies, absurd enough. The eleventh treats of Man and Portents in four brief chapters, wherein we are told that *Homo* is the name given to man ‘*quia ex humo factus est* ;’ and his body is called *corpus* ‘*quod corruptum perit*.’ Then follows an explanation of anatomical terms. The twelfth book is on Animals, without one ray of light. The thirteenth and fourteenth treat of Geography and Meteorology ; the fifteenth of the origin of Kingdoms, of Public Edifices, and of Roads ; the sixteenth of Mineralogy, Weights and Measures ; the seventeenth of Agriculture ; the eighteenth of War and Sports ; the nineteenth of Ships, Architecture, and Clothes ; and the final book of Food, Domestic Utensils, Carriages, and Agricultural Implements.

Anyone even superficially acquainted with the Philosophy of these days, has only to combine with it such Science as this encyclopædia furnishes, to form a conception of the culture which the Arabian influences came to vivify.

* ‘*Hemerobaptistæ*, eo quod quotidie vestimenta sua et corpora lavant,’ *op. cit.* p. 351.

CHAPTER III.

THE RISE OF POSITIVE SCIENCE.

§ 1. THE THIRTEENTH CENTURY.

THE thirteenth century opens a new era; there, and not in the sixteenth, we must recognise the origin, as far as any origin can be definitely assigned, of the modern era. Scholasticism was far from dead; indeed the most illustrious scholastics, Albertus Magnus, Aquinas, Duns Scotus, and Occam, have still to be summoned before us; but Scholasticism had propounded all its problems, all its methods, and all its solutions. The renowned doctors who succeeded could only manipulate the old forms. Meanwhile the most redoubtable enemy of Scholasticism, which was finally to drive it into utter and helpless rout, had appeared on the field.

Two social influences of incalculable importance now first appear: these are what Auguste Comte calls the Industrial and the Scientific elements. Society, on the Feudal system, was governed by two great powers, the military or temporal, and the clerical or spiritual. By the sixteenth century each had apparently established itself for perpetual dominion; yet a retrospective glance detects even there the seeds of inevitable dissolution; those seeds are the industrial and scientific tendencies. Society advanced, the military function gradually declined in importance; and the industrial function, as gradually, increased. The importance of the clerical function also declined as the widening thoughts of men slowly changed the general conception of the world, and as the incompetence of theological notions became

daily more conspicuously contrasted with the certainties of Science. Society ceased to be based mainly on war. Peace permitted industrial development, and industry urgently demanded peace. The army then became the servant of society, and even as a servant its importance has slowly, but inevitably, declined. In like manner the Church, which formerly represented the spiritual power, which had regulated the beliefs, and with beliefs the actions of society, lost its supremacy and gradually lost its hold on the convictions, as one by one the various domains of thought were invaded by positive knowledge. Its position has now dwindled down to that of a friendly monitor, and even as such is only maintained by a constant struggle. Its very adherents only look to it for a solemn sanction, never for scientific guidance. It once claimed to decide all questions; none are put to it now, except such as have reference to another world. The affairs of this world have long passed out of its jurisdiction.

Such has been the result of six centuries of evolution, an evolution unsuspected in the thirteenth century, nor yet generally appreciated in our own. It has moved through fierce struggles. Both the military and clerical powers have declined as the industrial and scientific powers have advanced. The separation of the temporal and spiritual is not yet completed, but the management of temporal affairs has passed from the hands of Force into the hands of Law; and the management of spiritual affairs has passed from the dominion of Faith to the dominion of Reason. A radical change has been effected in our general conception of the world; the belief in supernatural agencies has given place to an ever-widening belief in natural agencies. In other words, the theological point of view has been discarded in all questions not immediately affecting Religion. Instead of conceiving the world under the dominion of Volitions, in their very essence *variable*, we have learned to conceive it as under the dominion of Laws, in their nature *invariable*, and invariable because they are the modes of

action of immanent powers, the relations of natural properties of things. This mighty change was slowly effected. Centuries of observation and meditation were necessary before the various and seemingly variable phenomena of the external order were suspected to arise from simple and invariable agencies ; powers *of* the world and *in* it, not powers existing apart from the world in alienated majesty and sublime independence.

Such a change is indeed radical. It is opposed to all primitive conceptions, and is still resisted by the imperfectly cultivated mind. It is the conquest of scientific research, which first disturbed the primitive conception by proving that this Earth was very far from being the greatest object in the universe, to which all other objects were subordinate. Astronomy, with its rigorous methods, assigned the Earth its place among celestial bodies.* Afterwards Biology gave what may be regarded as the complementary demonstration by proving that Man was not the lord of creation, but simply the apex of the animal series. Instead of the universe being subordinated to him, it was proved to be a vast system of magnificent Life, of which he only formed a modest item. These ideas having taken possession of men's minds, prepared the way for the conception of Society itself being not less rigorously determined in its evolution by laws ; so that just as in the life of an individual there are the successive Ages, in the life of Humanity there are successive Epochs, each age and each epoch being the product of that which went before it.

The results of this change in our conception of the world, by which the whole compass of phenomena, from the transit of a star to the creed of a nation, from the evolution of an organic cell to the evolution of Science, are all brought

* The admission of the fact that the Earth was small in comparison with other celestial bodies irresistibly suggested the idea of those bodies being also inhabited. Men struggled against this inference, and they struggle against it still. AQUINAS asserted that there could only be one inhabited world ; and his grounds were these : if a second were admitted there would be no reason for denying a third, and so on to infinity, ' which would be contrary to truth and revelation.'

under Law—may be summed up under two heads, theoretical and practical. The theoretical result is the limitation of our speculative activity to the problems that are verifiable—a limitation which is an intensification of power by its economy of effort and definiteness of aim. The practical result is that we, having once detected the modes of action of the immanent powers, can often foresee what will occur under given conditions, and thus either we can modify them so as to adapt them to our needs, or we can resign ourselves to them where they are seen to be inevitable.

It was in the thirteenth century that the great social and intellectual influences began the work of dissolution and reconstruction. I cannot pause here to enumerate the varied claims of this epoch, the importance of its political, religious, and social struggles, the splendour of its Architecture, the rapid development of its Commerce; my business is with its Philosophy, and especially with the new directions impressed upon the movement of Philosophy by the introduction of Greek and Arabian science. At the close of the twelfth century Scholasticism had passed into Mysticism; urged by a weary sense of its impotence, Reason was in danger of once more becoming the obedient servant of Faith. We have now to see the twofold demand for Authority and Liberty, responded to by the installation of Aristotle, and the widening reach of physical research. These may be best considered in two eminent types, Albertus Magnus and Roger Bacon: the former is the most conspicuous figure of the century, and may be regarded as the incarnation of the principle of Authority; the latter is so distinguishably the prophet of modern Inquiry, that only in modern times has his true position been understood.

§ II. ALBERTUS MAGNUS.

The ‘ape of Aristotle,’ as he was not unreasonably named, endeavoured to consolidate the theological conception of the

world, by bringing all classes of phenomena within an encyclopædic system in harmony with that conception. I have only a second-hand acquaintance with his works. More than once, indeed, I have opened the ponderous folios with the determination to master at least some portion of their contents; but I shut them again with an alacrity of impatience which will be best comprehended by anyone who makes a similar attempt. In the analyses given by Jourdain, Hauréau, and Rousselot * may be read as much as most students will desire.

Albert, count of Bollstadt, was born at Lavingen, in Swabia, in the year 1193. After studying dialectics at Paris, mathematics and medicine at Padua, and metaphysics in many places, he joined the Dominicans, and became renowned as preacher and teacher. This indeed was his true vocation; and after tasting many and high honours, he resigned his bishopric and returned to his professorial chair at Cologne, and died there, aged eighty-seven, leaving behind him an immense reputation, and works which in Jammy's edition amount to twenty-one thick folios. Legend has hovered round his name. Vincent de Beauvais called him a magician, and the people believed in his magic, in quite another sense. Alchemy was his favourite study; and although all scientific inquiry had a suspicious relationship with the darker powers, alchemy was supposed to be, *par excellence*, the instrument of magic.

Albertus Magnus added nothing of his own as a contribution to Philosophy, but he powerfully affected the thought of his day by the encyclopædic character of his labours. He reproduced every one of Aristotle's treatises with commentary, and with such additions as the writings of the Arabs supplied. That he frequently misunderstood Aristotle may have been due as much to the corrupt Arabian

* The work of M. POUCHET, *Histoire des Sciences naturelles au moyen âge ; ou, Albert le Grand et son Époque*, Paris, 1853, is a poor compilation from second-hand sources. I do not know what is the value of M. D'ASSAILLY's work, *Albert le Grand ; l'ancien monde devant le nouveau*, Paris, 1870 ; but the books on this subject are so few that the reader may be glad to know the existence of this one.

sources on which he relied,* as to the theological bias with which he necessarily studied them. It is certain that both by nature and education he was indisposed to innovate, especially in questions which had a theological bearing. 'Whenever divine things are touched on,' he says, 'faith must predominate over reason, authority over argument;' and accordingly the decisions of Aristotle, authoritative as they are in matters of Philosophy, have nevertheless to give way to the decisions of the Church, whenever there seems to be a discrepancy: as to either of them giving way to the truth of things, the alternative is never thought of.

Nevertheless, in spite of his reverence for Authority, the fact that he was the first doctor in the Middle Ages who publicly commented on the various treatises of Aristotle sufficiently accounts for the eminence of his reputation. By spreading the knowledge of what Aristotle and the Arabians taught he enlarged the horizon of Philosophy, and stimulated men's minds to research in other directions than those in which Scholasticism hitherto had confined them. Physics, Alchemy, Natural History, Ethics, were indeed but imperfectly treated: it was a great thing for these subjects to be treated at all. Moreover Scepticism was aided in another way, unconsciously indeed, yet all the more effectively:—I allude to the plan Albertus uniformly pursues, and which was followed by all his successors, of stating the objections which can be raised against every thesis, and answering them serially. It is true that his mode of answering them is very little more than an interrogation of the authorities; but the mere habit of debate was certain to develop Scepticism.

The full development of his efforts is seen in Aquinas, the greatest of the scholastics. But I cannot pause here to sketch the portrait of the Angelic Doctor (born 1227, died 1274).† Referring the student to the special historians of

* See this circumstantially established by JOURDAIN: *Recherches sur les traductions latines d'Aristote*.

† As the writings of AQUINAS are neither very accessible nor very inviting, the

this epoch, I must hasten on to the thinker who represents the critical and insurgent movement.*

§ III. ROGER BACON.

There is no writer during the whole of the Middle Ages so interesting, to those who are tracing the evolution of thought, as Roger Bacon; but my present limits do not permit of an exhaustive treatment of his labours, and as I propose to devote a special chapter to him in a future History of Science, I must be content here with a very rapid indication of the part he played, and refer the reader to the excellent sources named below.†

Roger Bacon is an energetic representative of the insurgent minds of the thirteenth century, and he had in common with the insurgent minds of most ages a noble vision of a coming future, and an extravagant confidence in the realisation of his hopes. An impatient scorn of contemporaries, and a fervent sympathy with all innovators, animate almost every page of his works; while his boastful confidence in his own knowledge, and in the mighty results that would be achieved could he once be allowed his own way, give a certain pathetic interest to his frustrated efforts. We learn from his casual indications that there was a group of independent thinkers, standing apart from the slothful ignorance of the many, and from the sterile activity of the scholastics, advocating greater freedom of thought and wider reach of inquiry, cultivating Mathematics and Physics, dreaming of great revolutions, and

student who has never seen them, or who, having seen them, has felt his courage shrink from grappling with them, may be glad to hear that several important little treatises have been translated by Professor ROSSI, and are thus made readily accessible in his volume *Opuscoli Filosofici*, Florence, 1864.

* An interesting discussion of the question whether Aquinas did or did not hold the doctrine of 'sensible species' or 'ideas' as something intermediate between the objects and the mind, will be found in ROUSSELOT: *Études sur la Phil. au moyen âge*, II. 250, and HAURÉAU: *De la Phil. scolastique*, II. 177.

† ÉMILE CHARLES: *Roger Bacon, sa vie, ses ouvrages, ses doctrines, d'après des textes inédits*. Paris, 1861.—ROGERI BACONIS: *Opera Inedita*, edited by J. S. BREWER. Published under direction of the Master of the Rolls. London, 1859. These, with the *Opus Majus*, edited by JEBB, furnish ample material.

assailing the blind servility to texts and sentences. These were Roger Bacon's teachers and friends. Towering above them all is Robert Grossetete, bishop of Lincoln, a mathematician who despaired of Aristotle, and strove to find out for himself what the obscurity of translations kept hidden, who opposed the monks, opposed the pope, and impressed his image on the popular mind, mingled with admiration and superstitious terror. A precursor of Bacon, he acquired the reputation of a sorcerer; a precursor of Wiclif, he had called the pope Antichrist.*

Bacon early chose his career. While he regarded all the scholastics as barbarians in comparison with Aristotle and the Arabs, he was not prepared to accept even Aristotle as infallible. Experience was a surer guide; a little grammar and mathematics were preferable to all the metaphysic of the schools. He learned Greek, Arabic, Hebrew, Chaldaic—studied mathematics, alchemy, optics, and agriculture. He tells us that he had spent 2,000 livres in conducting experiments. People marvelled that he could survive his excessive labours. Unhappily, the fruits of forty years of study, fruits which in his estimation would feed the hungry world, it was his bitter lot to see himself forbidden to give out. In an evil hour he had joined the order of Franciscan monks. His superiors, either jealous, or alarmed at the tendencies they discovered, forbade his writing. If he ventured to instruct some curious brother, imprisonment on bread and water was his punishment, and his book was destroyed. He was treated like a disobedient schoolboy, or else like a suspected heretic. Books were refused him. If he attempted to teach his pupils how to calculate and to observe the stars, the influence of Satan was inferred.† Nor is it only in the Middle Ages that men

* CHARLES: *Op. cit.* p. 7.

† M. CHARLES quotes an old ecclesiastical historian, who says that 'Friar Bungay was profoundly versed in mathematics, either through the inspiration of Satan, or the teaching of Roger Bacon.' - Let me add the counter-statement of ROGER BACON, that the neglect of mathematics is the work of Satan: 'Et hoc diabolus procuravit quatenus radices sapientiæ humanæ ignorarentur.' *Opus Tertium*, c. xx. p. 66.

reputed wise and undeniably pious have regarded the knowledge of Nature as indirectly aiding the designs of Satan, simply because such knowledge was not to be gained from the sources they were accustomed to regard as exclusively sacred. This will prepare us to understand how Pope Clement IV., desiring Bacon to send his work, nevertheless while authorising him to disobey his superior (*tibi per Apostolica scripta præcipiendo mandamus, quatenus, non obstante præcepto Prælati cujuscunque contrario, vel tui Ordinis constitutione quacunque*) urged upon him the necessity of doing it secretly and hastily (*et hoc quanto secretius poteris facias et indilate*). The pope had scientific yearnings, and was very curious to know what Bacon had to impart; but he knew the temper of the age, and he knew the power of the Franciscans.*

The work Clement desired to have sent him was not yet written, as he supposed; but the expression of his desire was a welcome stimulus to Bacon, who replied, 'I feel myself elevated above my ordinary strength; I conceive a new fervour of spirit. I ought to be most grateful since your Beatitude has importuned me for that which I have most ardently desired to communicate, for that which I have laboured with immense toil, and brought into light after manifold expenses.' The task was rendered heavier by reason of his poverty. 'To place before Clement IV. a just account of researches carefully and continuously prosecuted for forty years,' says Mr. Brewer, 'required the free use of accomplished scribes, for whose services he could not look to his own Order. A laborious work on science and languages in the thirteenth century demanded a knot of accomplished transcribers

* M. OZANAM: *Dante et la Philos. catholique au 13^{me} siècle*, Louvain, 1847, p. 26, has a singularly misplaced sneer at the Reformers: 'Plus tard, et à l'époque de la Réforme, ses manuscrits furent brûlés dans l'inconscience d'un couvent de son ordre, par des hommes qui prétendaient rallumer le flambeau de la raison éteint par les moines du moyen âge.' Without excusing the violence of the Reformers, we may at least absolve them from having wittingly destroyed works which the monks had done their utmost to prevent being written, and which their successors took care not to publish.

possessed of more than average skill, who could construct tables, draw diagrams, and knew something of Greek and Hebrew. Where were such men to be procured?' Moreover, the pope had not ventured to interpose between Bacon and his superiors. 'You forgot,' wrote Bacon, 'to speak to my superiors in my excuse; and as I could not make known to them the secret, they threw obstacles in my way.' Nor was this the worst. 'There was another obstacle,' Bacon wrote, 'which had nearly proved subversive of the whole business; and that was want of money. For more than sixty French livres had to be expended . . . and your messengers would not lay out a single penny, although I told them I would send you word of the amount, and that every man's debts should be paid. You know that I have no money and can have none [as a Mendicant Friar], therefore I am prevented from borrowing.'

Yet his spirit was victorious over all obstacles. In eighteen months he had composed and written out for the pope the *Opus Majus*, *Opus Minus*, and the *Opus Tertium*. 'As an instance of immense labour and application almost superhuman,' says Mr. Brewer, 'these three answers to the demand of the pope must be reckoned among the most remarkable curiosities of literature, independently of their intrinsic merits.'* And while this poor student was thus miserably contending against external obstacles, his rivals Aquinas and Albertus Magnus were courted and aided by all temporal and clerical dignitaries. It was about this very time that 'Albert le Grand donnait à l'Empereur cette fastueuse hospitalité qui l'a rendu célèbre dans l'imagination populaire.'†

The fate of the works written under such disadvantages has been pitiable. Too much in advance of their age to be appreciated, they have only in quite modern times been rescued from the neglect and destruction too inevitably attending manuscripts. The *Opus Majus* was published by Jebb in 1733; and the *Opus Minus* and *Opus Tertium* first appeared no later than 1859. According to M. Charles, not

* BREWER: *Op. cit.* Preface, xlv.

† CHARLES: *Op. cit.* p. 31.

a single doctor of the thirteenth and fourteenth centuries mentions Bacon either for blame or praise. Such wide-sweeping statements must be received with hesitation ; but we may infer at least that Bacon's name is so rarely cited as to warrant the biographer's statement that his influence was inappreciable. ' Ses idées, ensevelies dans ses manuscrits, devaient y rester près de trois cents ans jusqu'à ce qu'un autre Bacon vint les reprendre pour son compte, y ajouter encore, et, mieux servi par les circonstances, les faire passer définitivement dans la science.'

On my first reading of the *Opus Majus* I was startled and delighted by what seemed the remarkable insight with which Bacon had anticipated several of the leading conceptions of positive philosophy. A more intimate familiarity toned down that surprise, and moderated that admiration, showing me that I had yielded to the common temptation of reading *into* ancient texts the views of modern thinkers. But even after the rectification of this erroneous impression, after an examination of Bacon's scientific ideas and pretended discoveries, which reduced their claims to a very modest rank (as I shall fully explain in the History of Science), there still remained admiration for a vigorous thinker, one of the most remarkable of the neglected heroes of Humanity. Considered with reference to his contemporaries, he is a giant ; and the comparison which spontaneously presents itself with his illustrious namesake, Francis Bacon, by no means diminishes his eminence.

It is indeed a point of singular interest that, in spite of there not being even the smallest probability of Francis Bacon having read a single page of Roger Bacon's work * (either in the originals, because they were unprinted, or at second hand, because they were never cited), a very curious list of parallel passages might be given, over and above the

* The tract *De Mirabil. Potest. Artis et Naturæ*, a translation of which appeared in 1618, FRANCIS BACON may have seen. At any rate he quotes one or two stories from it, with an expression of disbelief, in his *Hist. Vitæ et Mortis* ; and elsewhere, in the *Temporis Partus Masculus*, he speaks slightly of his great namesake.

resemblances in doctrine. Had there been on external grounds the shadow of a probability, there would have been on internal grounds the strongest evidence of Francis Bacon's plagiarism; as it is, we are forced to admit a simple coincidence; unless a more comprehensive acquaintance with the literature of the Middle Ages should prove the resemblances to be traceable to a common source. Some of these, indeed, follow naturally from the antagonism against Aristotle and the Scholastic Method, which was the leading purpose of both. Having seen the vanity of the Syllogism they could only seek refuge in Experience. Having seen the wearisome inutility of Scholasticism, they could only insist with greater emphasis on the 'fruits,' and make utility their aim. Having seen that men had all gone wrong, because all pursued a wrong Method, the suggestion of certain Idols of the mind was near at hand, and the nature of these Idols could not be very differently interpreted. Finally, having a supreme confidence in their own Method, it was natural that both should fall into the strange error of supposing that their Method would, so to speak, equalize men's minds, and render Science easily accessible to all.* It is less on such resemblances as these, though they arrest the reader, that a charge of plagiarism could be based, than on resemblances in expression (such as the *prerogatives* of Experiment) and in unimportant passages. I had drawn up a list of these, but cannot now find it; any diligent reader will notice several in the course of his study. Mr. Brewer alludes to them in his preface.†

* FRANCIS BACON's belief in his Method was extravagant; but ROGER surpassed him, declaring not only that he could teach a willing pupil in three or six months all that he had taken forty years to learn, but that *three days* would suffice for Hebrew or Greek. *Opus Tertium*, c. xx. p. 65. While I fully concur with Mr. SPEDDING in recognising but a faint resemblance between the 'offendicula' of ROGER and the 'idols' of FRANCIS, I altogether dissent from the judgment of Mr. ELLIS that 'the general resemblance between the spirit in which the two Bacons speak of science and its improvement is slight.' (*Bacon's Works*, i. 90.) It is precisely here that the resemblance seems to me to be striking.

† I do not reckon such resemblances as the famous epigram of FRANCIS BACON: 'Antiquitas seculi juvenus mundi,' the idea of which is clearly expressed by ROGER: 'quanto juniores tanto perspicaciores, quia juniores posteriores successione tempo-

Four great stumbling blocks to truth (*veritatis offendicula*) impede the inquirer's progress, according to Bacon, and these are: 1. The influence of fragile and unworthy authority, *fragilis et indignæ auctoritatis exemplum*. 2. Custom, *consuetudinis diuturnitas*. 3. The imperfection of undisciplined senses, *vulgi sensus imperiti*. 4. The concealment of our ignorance by ostentation of our seeming wisdom, *propriæ ignorantie occultatio cum ostentatione sapientiæ apparentis*.

It is on the evil influence of Authority that he is most copious and effective: *nam auctoritas solum allicit, consuetudo ligat, opinio vulgi obstinatos parit et confirmat*. He shows how fallible is the authority even of the wisest philosophers, and the most illustrious fathers, 'who were wise indeed, but not wise in their opposition to truth;' and he declares it to be a feeble argument which rests only on tradition, or the wisdom of our ancestors; rather we should infer that the older and commoner a belief, the greater the chance of its being a mere prejudice. Popular opinion excites his scorn. It was the mob that abandoned Jesus after following him for two years, and shouted 'Crucify him!' Philosophy has always been persecuted. Aristotle was calumniated, Avicenna persecuted, Averroes decried: 'whoever attempted to reform philosophy has been thwarted in every way; nevertheless truth has triumphed, and will triumph till the coming of Antichrist.' *

But let us not be precipitate, and conclude that Bacon held the views about Authority which are held by modern insurgents. Remember that it is a friar of the thirteenth century who is denouncing the evil influence of intellectual servility, and you will understand how he could in all sincerity add 'I do not allude to that truth and solid authority which by God's choice has been placed in the hands of the Church, or which

rum ingrediuntur labores priorum.' *Opus Majus*, c. vi. pp. 7, Venet. 1750. The same idea is met with in many writers; among others in GIORDANO BRUNO (*Opera*, i. p. 132); the felicity of the epigrammatic expression is due to FRANCIS BACON.

* *Opus Majus*, p. 10. Comp. *Opus Tertium*, c. ix. p. 28. 'Certo multi fuerunt sancti et boni inter Judæos quando crucifixus est Dominus, et tamen omnes dimiserunt Eum.'

the saintly philosophers and infallible prophets have acquired by their own merit.' Elsewhere he places the remedy for the evils first in the study of that only perfect wisdom which is found in the Scriptures, and secondly in the study of Mathematics, and the use of Experiment. This combination of Scripture and Mathematics, so incomprehensible to us, had nothing startling to a man of that age. The infallibility of the Church was not to be shaken off in a day. The idea of Scripture not containing all wisdom is an idea which has very slowly made its way. Moreover in the state of ignorance, which was the state of the wisest in the thirteenth century, we cannot doubt Bacon's sincerity when he exclaims: 'What man knows is little and worthless in respect of that which he believes without knowing; and still less in respect of that which he does not know. Mad is he who thinks much of his wisdom; maddest he who exhibits it as something marvellous.'*

It is to be noted that Bacon always insists on the harmony of revelation and reason, and stigmatizes the distinction which was then daily growing in credit, of truth according to Scripture and truth according to Philosophy. They are vile heretics who make this distinction: 'mentiuntur tanquam vilissimi heretici;' that which is false in philosophy cannot be true elsewhere. 'Nam quicquid est contrarium sapientiæ Dei vel alienum est erroneum et inane, nec potest humano generi valere.' Therefore all wisdom is to be found in Scripture, and drawn from thence by Philosophy and the Canon Law.† Nevertheless, while Bacon thus vindicates the authority of Scripture, he is firm in asserting the integrity of Philosophy, which he regards as revealed by God, and as needed for the perfect fulfilment of Scripture. Indeed we may say that although unhesitatingly accepting the dogmas

* 'Pauca enim sunt et vilia respectu eorum quæ non intelligit sed credit, et longe pauciora respectu eorum quæ ignorat. Et quoniam respectu eorum quæ scit homo restant infinita quæ ignorat; insanus est qui de sapientia se extollit, et maxime insanit qui ostentat et tanquam portentum suam scientiam nititur divulgare.' *Opus Majus*, p. 11.

† *Opus Tertium*, c. xxiii.-iv.

of Christianity, he everywhere accepts them because they are true, and not because they claim the authority of the Fathers : against that authority he is always ready to oppose the verdicts of reason.

Dr. Whewell declares the existence of Roger Bacon's work to be a problem which has never yet been solved ; * so greatly was it in advance of the age. I think that had the historian been somewhat better acquainted with the writings then current, especially with the Arabian writings from which Bacon drew so largely, he would have seen a ready solution of this problem. I am myself but very superficially acquainted with these writings, yet I have discovered evidence enough to make the position of Roger Bacon quite explicable without in the least denying him extraordinary merit. Some of the most striking thoughts of Bacon I have found in Avicenna and Averroes, and in passages cited by Bacon himself. Nevertheless it is a point of great interest to see how this friar in the thirteenth century had assumed the positive attitude, and several of the positive principles. The luminous distinction between Abstract and Concrete Sciences had not altogether escaped him. The important principle that each order of conceptions should be independent—'in nulla facultate extranea debet dominari'—was seized by him at a time when Albertus Magnus protested against the introduction of Mathematics into Physics ; and while the ignorant Fathers had discredited mathematical study, Roger Bacon made it the basis of all science—*alphabetum philosophiæ* : a conception, as Dr. Whewell remarks, in which he is superior to Francis Bacon. At a time when the Syllogistic Method was supreme, he could not only laugh at it, and disclose its incompetence, he was ready to replace it with the Scientific Method and its two handmaidens Mathematics and Experiment. 'In every science,' he said, 'we must follow the best method, and that is to study each part in its due order, placing that first which is properly at the commencement, the easy

* WHEWELL: *Hist. of the Inductive Sciences*, 3rd ed. i. 366.

before the difficult, the general before the particular, the simple before the complex. And the exposition must be demonstration. This is impossible without experiment. We have three means of knowledge: Authority, Reasoning, and Experiment. Authority has no value unless its reason be shown; it does not teach, it only calls for assent. In Reasoning we commonly distinguish a sophism from a demonstration by verifying the conclusion through experiment.' He is constantly insisting on the necessity of Verification, and on the futility of argument.* 'Experimental Science is the mistress of the speculative sciences, and has three great Prerogatives. First she tests and verifies the conclusions of other sciences. Secondly, she discovers in the notions which other sciences deal with magnificent results to which these sciences are incompetent. Thirdly, she investigates the secrets of nature by her own powers.' His clear insight is displayed in the recognition of an essential connection of all the sciences. Comte himself might have written this passage: 'Omnes scientiæ sunt connexæ, et mutuis se foveant auxiliis, sicut partes ejusdem totius, quarum quælibet opus suum peragit, non solum propter se, sed pro aliis.'†

We may echo Mr. Brewer's remark: 'If the world loves to contemplate the great Lord Chancellor of James I. retiring from the court or the parliament to his museum at Gray's Inn or Gorhambury, laying aside his chancellor's robe to watch the furnace or count the drops from the alembic, the example of the solitary friar with more scanty means and fewer associates justifying the value of experiment, in a darker and less favourable age, is not less interesting. So far as the prize is to be given to mere invention, Roger Bacon has superior claims to Lord Bacon.'‡

* See especially *Opus Majus*, p. 336-7, over and above the well-known passages; and *Opus Tertium*, c. xiii.

† *Opus Tertium*, c. iv. p. 18.

‡ Mr. BREWER is less happy in his criticism of Roger Bacon when he says: 'though in his practice a keen and sagacious experimentalist, in his exposition of science he adopted the deductive in opposition to the inductive method.' In the first place, Roger Bacon never expounded a science, but only his general views of

He had a distinct idea of a science which should be a *prima philosophia*, constituted of all the fixed and universal Laws of Nature. In the study of this he repudiates as idle the search after Forms and Species, and seeks only the uniform agencies which are reducible to law. He ridicules the method of his day on which physical questions were solved by reason, *rationaliter*. 'If you ask one of these doctors what is the cause of Combustion, he can only answer you that the cause is occult.'

A closer examination of Bacon's writings would demand a long chapter. Such a chapter would display the incompleteness of his conceptions, the vagueness of his Method, and the strange credulity which in those days even his independent mind could not escape.

§ IV. OCCAM.

Roger Bacon left no school. He was too much in advance of his age; or rather he was too much in advance of the philosophical authorities to gain from them a proper recognition. The Scholasticism he opposed was still triumphant. The theologians opposed him because he inculcated Observation and discredited Authority. The philosophers were willing enough that he should attack Authority, but were not willing to listen to the same attacks upon their syllogistic method. They were not better disposed towards Observation and Experiment than the theologians were. To this day the inductive Method is distasteful to metaphysicians. Duns Scotus rose into rivalry with Aquinas, and the adverse sects of Thomists and Scotists filled Europe with their noisy disputes. Observation and Experiment instead of being practised were condemned as dangerous. In 1243 the Dominicans interdicted the study of medicine and all physical inquiry. In 1287, Chemistry was found to be dangerous.

The gradual development of Philosophy made it clear that science; and in the next place, the inductive method may be the best method of research, but the deductive is the method of exposition.

Aristotle could not be reconciled with several fundamental tenets of the Church. To save both, a distinction between the two kinds of truth was invented; and men taught the truth according to the Church and the truth according to Philosophy, as two parallel and independent lines. This could not last. Scholasticism was hastening to its end, and it received its death-blow from our brilliant and rebellious countryman William of Occam, who wrote vigorously against the temporal power of the Pope, and triumphantly against some metaphysical errors of the schools. This was in the early part of the fourteenth century.

Occam, according to M. Hauréau, is a writer of transparent candour who says what he means without equivocation. He is a freethinker, separating questions of reason from questions of faith, and not permitting the latter to embarrass the former. If the question arises as to the Divine intelligence being the first efficient cause of all that exists, he replies that as a philosopher he knows nothing about it, experience not instructing us in what way the cause of causes acts, and reason having neither the power nor the right to penetrate the divine sanctuary.

With Occam the doctrine of Realism came to an end. His advocacy of Nominalism was irresistible; and indeed it may all be said to be implied in his famous maxim about not multiplying entities. The multiplication of entities had gone on with immense fecundity in the schools. Wherever a phenomenon could be discerned an entity had to be invented to account for it—*oportet ponere aliquod agens*. But Occam showed the weakness of this recourse; and to use the language of M. Hauréau, ‘Guillaume d’Ockham n’est pas seulement le chef d’une grande école; son influence sur les écoles adverses a été considérable: comme il rappelait dans les voies de la réalité les esprits fatigués de leurs vaines et laborieuses enquêtes dans les sphères du possible, son appel devait être, a été favorablement accueilli. Au treizième siècle, l’étude de la philosophie était une passion ardente, à laquelle on était prêt à faire beaucoup de sacri-

fices ; mais toutes les passions, même les plus généreuses, recherchent leur fin avec une ardeur déréglée : dès le commencement du quatorzième, on voit plus de calme dans les intelligences, et, comme elles reconnaissent la nécessité d'une méthode, elles sont disposées d'elles-mêmes à suivre le nouveau guide qui se présentera pour les conduire. Ce guide ce fut Guillaume d'Ockham.*

§ V. THE REVIVAL OF LEARNING.

The gathering forces of the new era may be most readily indicated by an enumeration of such names as Giotto, Dante, Petrarch, Boccaccio, Chaucer, Froissart, Tauler, Wiclif—men whose greatest labours fall within this fourteenth century ; and towards its close we must add the gradual influx of Greek scholars—Barlaam, Chrysoloras, Gaza, Bessarion, and George of Trebizond, whose learning and enthusiasm gave a new direction to philosophical speculation, and opened the treasures of classic wisdom.

With the revival of learning, after the fall of Constantinople, came fresh streams of Grecian influence. The works of Plato became generally known ; under Marsilio Ficino—to whom we owe the Latin translation of Plato*—a school of Platonists was formed, which continued to divide, with the school of Aristotle, the supremacy of Europe, under new forms, as before it had divided it under the form of Realism. The effect of this influx of Grecian influence, at a period when Philosophy was emancipating itself from the absolute authority of the Church, was to transfer the allegiance from the Church to Antiquity. To have suddenly cast off all authority would have been too violent a change ; and it may on the whole be regarded as fortunate for human development that Philosophy did so blindly accept the new authority—one altogether *human*, yet without deep roots in the life of the nation, without any external constituted

* In many respects our best guide to Plato's meaning where he is most obscure. It is printed in Bekker's edition.

power, consequently very liable to disunion and disruption, and certain to give way before the necessary insurgence of Reason insisting on freedom.

There is something profoundly rational in the principle of Authority, when not exercised despotically, and something essentially anarchical in the principle of Liberty, when not restrained within due limits. Both Authority and Liberty are necessary principles, which only in misuse become paralysing or destructive. It may be made perfectly clear to the rational mind that, as Comte says, there can be no such thing as 'liberty of private judgment' in Mathematics, Astronomy, Physics, Chemistry, or any other science the truths of which have been established; the person ignorant of these sciences does, and must, take upon trust the statements made by those who are authorities; he cannot indulge his 'private judgment' on the matter, without forfeiting the respect of those who hear him. Does this mean that all men are bound blindly to accept what astronomers and chemists assert? No; to require such submission of the judgment, is to pass beyond the principle of Authority, and assume that of Despotism. The principle of Liberty assures entire freedom to intellectual activity, warrants the control of Authority, and incites men to control it by submitting its positions to those elementary tests by which it was itself originally constituted. If I have made a series of experiments which have led to the disclosure of an important truth, your liberty of private judgment is mere anarchy if it assert itself in denying the truth simply out of your own pre-conceptions; but it is healthy freedom if it assert itself in denying the truth after having submitted my authority to its original tests (those experiments, namely, which gave it authority), and after detecting some error in my experimentation, or some inaccuracy in my induction. The authoritative statement of Sir Charles Bell, repeated by every other anatomist, respecting the separate functions of the anterior and posterior columns of the spinal chord, was one which permitted no liberty of private judgment, but did permit liberty of

private verification; and when M. Brown-Séquard repeated the original experiments and proved the former conclusions to be erroneous,* his authoritative statement replaced that of previous anatomists, and will continue to replace it, until it has undergone a similar defeat through the process of verification.

If this is a correct view, it will enable us to understand the long continuance of Aristotle's authority, which coerced the minds of men as the authority of one confessedly a master in his art, and one whose positions would not easily be brought to the test of verification. Hence, as Bayle says, the method employed was first to prove every thesis by authority, and next by arguments; the proofs by authority were passages from Aristotle; the arguments went to show that these passages, rightly interpreted, meant what the thesis meant.

Other causes contributed to foster this reverence for Authority; only one cause could effectually destroy it, and that was the rise of positive Science, which, by forcing men to verify every step they took, led them into direct antagonism with the ancients, and made them choose between the new truth and the old dogma. As Campanella—one of the reforming thinkers—acutely saw, 'the reforms already made in philosophy must make us expect its complete change; and whoever denies that the Christian mind will surpass the Pagan mind, must also deny the existence of the New World, the planets and the stars, the seas, the animals, the colonies, the modern sects and the new cosmography.'† It does not come within our purpose here to trace the rise and development of Science; we therefore pass at once to the philosophical insurgents against the authority of Aristotle and the Church well typified in Giordano Bruno.

* See *Mémoires de la Société de Biologie*. 1855.

† Quoted by M. RENOUVIER, *Manuel de Philos. moderne*, p. 7.

§ VI. GIORDANO BRUNO.

The martyrdom of Bruno has preserved his name from falling into the same neglect as his writings. Most well-read men remember his name as that of one who, whatever his errors might have been, perished a victim of intolerance. But the extreme rarity of his works, aided by some other causes into which it is needless here to enter, has, until lately, kept even the most curious from forming any acquaintance with them. The rarity of the writings made them objects of bibliopolic luxury: they were the black swans of literature. Three hundred florins were paid for the *Spaccio* in Holland, and thirty pounds in England. Jacobi's mystical friend, Hamann, searched Italy and Germany in vain for the dialogues *De la Causa* and *De l' Infinito*. But in 1830, Herr Wagner, after immense toil, brought out his valuable edition of the Italian works, and since then students have been able to form some idea of the Neapolitan thinker.*

Giordano Bruno was born at Nola, in La Terra di Lavoro, a few miles from Naples, and midway between Vesuvius and the Mediterranean.† The date of his birth is fixed as 1548—that is to say, eight years after the death of Copernicus,—whose system he was to espouse with such ardour,—and eight years before the birth of our own illustrious Bacon. Tasso well says:

‘ La terra
Simili a sè gli abitator’ produce ;’

and Bruno was a true Neapolitan child—as ardent as its volcanic soil, burning atmosphere, and dark thick wine (*mangiaguerra*)—as capricious as its varied climate. There was a restless energy which fitted him to become the preacher

* *Opere di Giordano Bruno, Nolano, ora per la prima volta raccolte e pubblicate da Adolfo Wagner.* 2 vols. Leipzig, 1830.

† For the biographic details I am mainly indebted to the valuable work of M. CHRISTIAN BARTHOLMESS, entitled *Jordano Bruno*, 2 vols. Paris, 1848; and the extremely important *Vita di Giordano Bruno*, recently published by DOMENICO BERTI. Florence, 1868.

of a new crusade—urging him to throw a haughty defiance in the face of every authority in every country,—an energy which closed his wild adventurous career at the stake. He was also distinguished by a rich fancy, a varied humour, and a chivalrous gallantry, which constantly remind us that the athlete is an Italian, and an Italian of the sixteenth century. Stern as was the struggle, he never allowed the grace of his nature to be vanquished by its vehemence. He went forth as a preacher; but it was as a preacher young, handsome, gay, and worldly—as a poet, not as a fanatic.

The first thing we hear of him is the adoption of the Dominican's frock. In spite of his ardent temperament, full of vigorous life he shuts himself up in a cloister,—allured, probably, by the very contrast which such a life offered to his own energetic character. Bruno in a cloister has but two courses open to him: either all that affluent energy will rush into some stern fanaticism, and as in Loyola, find aliment in perpetual self-combat, and in bending the wills of others to his purposes; or else his restless spirit of inquiry, stimulated by avidity for glory, will startle and irritate his superiors. It was not long ere the course was decided. He began to doubt the mystery of transubstantiation. Nay more: he not only threw doubt upon the dogmas of the Church, he had also the audacity to attack the pillar of all faith, the great authority of the age—Aristotle himself. The natural consequences ensued—he was feared and persecuted. Unable to withstand his opponents, he fled. Casting aside the monkish robe, which clothed him in what he thought a falsehood, he fled from Italy at the very time when Montaigne, having finished the first part of his immortal Essays, entered it, to pay a visit to the unhappy Tasso, then raving in an hospital.

Bruno was now an exile, but he was free; and the delight he felt at his release may be read in several passages of his writings, especially in the sonnet prefixed to *L' Infinito* :

' Uscito di prigione angusta e nera,
Ove tanti anni error stretto m' avvinse :
Quà lascio la catena, che mi cinse
La man di mia nemica invida e fero,' etc.

He was thirty years of age when he began his adventurous course through Europe—to fight single-handed against much of the falsehood, folly, and corruption of his epoch. Like his great prototype, Xenophanes, who wandered over Greece a rhapsodist of philosophy striving to awaken mankind to a recognition of the Deity whom they degraded by their dogmas, or like his own unhappy rivals, Campanella and Vanini, Bruno became the knight-errant of truth, ready to combat all comers in its cause. His life was a battle without a victory. Persecuted in one country, he fled to another—everywhere sowing the seeds of revolt, everywhere shaking the dynasty of received opinion. It was a strange time,—to every earnest man, a sad and almost hopeless time. The Church was in a pitiable condition—decaying from within, and attacked from without. In general the lower clergy were degraded by ignorance, indolence, and sensuality; the prelates, if more enlightened, were enlightened only as epicures and pedants, swearing by the Gods of Greece and Rome, and laboriously imitating the sonorous roll of Ciceronian periods. The Reformation had startled the world, especially the ecclesiastical world. The Inquisition was vigilant and cruel; but among its very members there were sceptics. Scepticism, with a polish of hypocrisy, was the general disease. It penetrated almost everywhere—from the cloister to the cardinal's palace. Scepticism, however, is only a transitory state. In all ages we see it stimulating new reforms. Reformers were not wanting in the sixteenth century. Of the Lutheran movement it is needless here to speak. The sixteenth century marks its place in history as the century of revolutions: it not only broke the chain which bound Europe to Rome, it also broke the chain which bound philosophy to Scholasticism and Aristotle. It set human reason free; it proclaimed the liberty of thought and action. In the vanguard of its army, we see Telesio, Campanella, and Bruno, men who must always excite our admiration and our gratitude for their cause and for their courage. They fell fighting for freedom of thought and utterance—the victims

of a fanaticism the more odious because it was not the rigour of belief, but of *pretended* belief. They fought in those early days of the great struggle between science and prejudice, when Galileo was a heretic, and when the implacable severity of dogmatism baptized in blood every new thought born into the world.

One spirit is common to all these reformers, however various their doctrines: the spirit of unhesitating opposition to the dominant authority. In the fifteenth century men were occupied with the newly-awakened treasures of ancient learning: it was a century of erudition; the past was worshipped at the expense of the present. In art, in philosophy, and in religion, they sought to restore the splendours of an earlier time. Brunelleschi, Michael Angelo, Raphael, disdaining the types of Gothic art, strove to recall once more the classic type. Marsilio Ficino, Mirandola, Telesio, and Bruno, discarding the subtleties and disputes of Scholasticism, endeavoured to reproduce Pythagoras, Plato, and Plotinus. In religion, Luther and Calvin, avowedly arising against Papal corruptions, laboured to restore the Church to its primitive simplicity. Thus the new era seemed retrograde. It is often so. The recurrence to an earlier time is the preparation for a future. We cannot leap far, leaping from the spot where we stand; we must step backwards a few paces to acquire momentum.

Giordano Bruno ceaselessly attacked Aristotle. In so doing he knew that he grappled with the Goliath of the Church. Aristotle was a synonym for reason. An anagram was made of his name, '*Aristoteles: iste sol erat.*' His Logic and Physics, together with the Ptolemaic system of Astronomy, were then considered as inseparable portions of the Christian creed. In 1624—a quarter of a century after Bruno's martyrdom—the Parliament of Paris issued a decree banishing all who publicly maintained theses against Aristotle; and in 1629, at the urgent remonstrance of the Sorbonne, decreed that to contradict the principles of Aristotle was to contradict the Church! There is an anecdote recorded somewhere of a

student, who, having detected spots in the sun, communicated his discovery to a worthy priest: 'My son,' replied the priest, 'I have read Aristotle many times, and I assure you there is nothing of the kind mentioned by him. Go rest in peace; and be certain that the spots which you have seen are in your eyes, and not in the sun.' When Ramus solicited the permission of Beza to teach in Geneva, he was told, 'the Genevese have decreed once for all, that neither in logic, nor in any other branch of knowledge, will they depart from the opinions of Aristotle—*ne tantillum quidem ab Aristotelis sententiâ deflectere.*' It is well known that the Stagirite narrowly escaped being canonized as a Saint. Are you for or against Aristotle? was the question of philosophy; and the piquant aspect of this *ἀριστοτελεομαχία* is the fact that both parties were often ignorant of the real opinions of the Stagirite; attributing to him indeed doctrines the very reverse of those which a more ample knowledge of his writings has shown him to have taught.

Bruno, as we said, took his stand opposite the Aristotelians. Pythagoras, Plato, Plotinus, and Lucretius were his teachers. Something of temperament may have originated this; for Bruno undoubtedly belongs to that class of thinkers in whom Logic is but the handmaid of Imagination and Fancy. To him the Aristotle of that age was antipathetic. The Aristotelians taught that the world was finite, and the heavens incorruptible. Bruno declared the world to be infinite, and subject to an eternal and universal revolution. The Aristotelians proclaimed the immobility of the earth: Bruno proclaimed its rotation. Such open dissidence could of course only enrage the party in power. It would have been sufficiently audacious to promulgate such absurdities—*horrenda prorsus absurdissima*—as the rotation of the earth; but to defy Aristotle and ridicule his logic, could only proceed from the audacity of impiety. So Bruno had to fly.

To Geneva he first directed his steps. A colony of Italian exiles had established itself there; among them was the Marchese di Vico, who on learning the arrival of an Italian

in a monk's dress, which Bruno had resumed by the advice of friends in Padua, called on him and enquired whether he came there to profess Calvinism. 'To which,' says Bruno, 'after giving an account of myself and the reason of my having quitted my Order, I replied that I had no intention of making any such profession, not being acquainted with the nature of Calvinism, and that I was only desirous of living in freedom.' He adopted the Marchese's suggestion, however, not longer to wear the monk's costume, and entered into a printing-office as corrector of the press. For some months he continued thus earning his livelihood, often going to hear the Protestant preachers, French and Italian; but since he could not join the community, it was intimated to him that no farther assistance was to be expected. He departed, therefore, in search of more tolerant cities. After a short stay at Lyons he proceeded to Toulouse; there he raised a storm among the Aristotelians, such as compelled him to fly to Paris, the streets of which were still slippery with the blood of the eve of St. Bartholomew. It would not have been surprising had he been butchered without mercy; but, by some good fortune, he obtained the favour of Henry III., who not only permitted him to lecture at the Sorbonne, but offered to admit him as a salaried professor, if he would but attend Mass. Is it not strange that at a time when attendance at Mass was so serious a matter,—when the echoes of that lugubrious cry, *La messe ou la mort!* which had resounded through those narrow murky streets, must have been still ringing in men's ears,—Bruno, in spite of his refusal, not only continued to lecture, but became exceedingly popular? Since Abelard had captivated the students of Paris with his facile eloquence and startling novelties, no teacher had been so enthusiastically received as Bruno. Young, handsome, eloquent, and facetious, he charmed by his manner no less than by his matter. Adopting by turns every form of address—rising into the aerial altitudes of imagination, or descending into the kennel of obscenity and buffoonery—now grave, prophet-like, and impassioned—now fierce and controversial—now

fanciful and humorous—he threw aside all the monotony of professional gravity, to speak to them as a man. He did not on this occasion venture openly to combat the prejudices and doctrines of the age; that was reserved for his second visit, after he had learned in England to speak as became a free and earnest man.

On the misty banks of our noble Thames, he was rudely initiated into the brutality of the English character; but he was amply compensated by his reception at the Court of Elizabeth, where a friendly welcome awaited all foreigners—especially Italians. Nor was his southern heart cold to the exquisite beauty and incomparable grace of our women. England was worth visiting; and he had reason to refer with pride to ‘questo paese Britannico a cui doviamo la fedeltà ed amore ospitale.’ It was in England he published the greater part of his Italian works. It was here perhaps that the serenest part of his life was spent. Patronised by the Queen (‘l’ unica Diana, qual è tra voi qual che tra gli astri il sole,’ as he calls her), he had the glory and the happiness to call Sir Philip Sidney friend.

In the high communion of noble minds, in the interchange of great thoughts and glorious aspirations, another than Bruno might have been content to leave the world and all its errors in peace; but he had that within him which would not suffer him to be at rest. He could not let the world wag on its way, content to smile at its errors. He was a soldier, and had his battles to fight. In the society of Sir Philip Sidney, Sir Fulke Greville, Dyer, Harvey, and most probably of Antonio Perez and Shakspeare’s Florio, Bruno *might* have discussed with calmness every question of philosophy, had he been of an epicurean turn—had he not been Bruno. As it was, lured by his passion for publicity no less than by his love of truth, he rushed into the arena.

It was not very long after his arrival in England (1583) that Leicester, then Chancellor of Oxford, gave that splendid *fête* in honour of the Count Palatine Albert de Lasco, of which the annals of Oxford and the works of Bruno have pre-

served some details. In those days a foreigner was 'lionized' in a more grandiose style than modern Amphitryons attempt. It was not deemed sufficient to ask the illustrious stranger to breakfast; there were no dinners given in public, or at the club. The age of tournaments had passed away; but there were still public discussions, which were a sort of passage-of-arms between the knights of intellect. And such a tourney had Leicester prepared in honour of the Pole. Oxford called upon her doughty men to brighten up their arms,—that is to say, to shake the dust from their volumes of Aristotle. All comers were challenged. Bruno stepped into the arena. Oxford chose her best men to combat for Aristotle and Ptolemy. On that cause her existence seemed to depend. Her statutes declared that the Bachelors and Masters of Arts who did not faithfully follow Aristotle were liable to a fine of five shillings for every point of divergence, or for every fault committed against the *Organon*. Bruno wittily called Oxford the *widow* of sound learning—'la vedova di buone lettere.'

The details of this wit combat are unknown to us. Bruno declares that fifteen times did he stop the mouth of his pitiable adversary, who could only reply by abuse.* But there is considerable *forfanterie* about the Neapolitan, and such statements must be received with caution. That he created a 'sensation' we have no doubt; his doctrines were sufficiently startling. We also find him, on the strength of that success, soliciting permission of the Oxford Senate to profess openly. With his usual arrogance he styles himself, in this address, as a 'doctor of a more perfect theology, and professor of a purer wisdom,' than was there taught. Strange

* 'Andate in Oxonia e fatevi raccontar le cose intravenute al Nolano quando pubblicamente disputò con que' dottori in teologia in presenza del Principe Alasco Polacco, et altri de la nobilità inglese! Fatevi dire come si sapea rispondere a gli argomenti, come restò per quindici sillogismi quindici volte qual pulcino entro la stoppa quel povero dottor, che come il corifeo de l' accademia ne puosero avanti in questa grave occasione! Fatevi dire con quanta inciviltà e discortesia procedea quel porco, e con quanta pazienza et umanità quell' altro, che in fatto mostrava essere Napoletano, nato et allevato sotto più benigno cielo!'—*La Cena de le Ceneri*: BRUNO: *Opp. Ital.* ii. 179.

as it may appear, permission was granted ; probably because he had the patronage of Elizabeth. He lectured on cosmology, also on the immortality of the soul : a doctrine which he maintained, not upon the principles of Aristotle, but upon those of the Neo-Platonists, who regarded this life as a brief struggle, a sort of agony of death, through which the soul must pass ere it attains to the splendour of existence in the eternal and universal life : the conviction of our future existence is given in the deep unquenchable desire which is within us to unite ourselves with God, and to quit this miserable sphere for the glorious regions of Eternity. No doubt he preached this doctrine with stirring eloquence ; but it must have sounded very heterodox in the ears of that wise conclave—styled by Bruno ‘ a constellation of pedants, whose ignorance, presumption, and rustic rudeness would have exhausted the patience of Job ; ’ and they soon put an end to his lectures.

We have already indicated the protection which Elizabeth accorded him, and which he repaid by adulation, extravagant enough, but which was then the current style in speaking of royalty ; and it should not be forgotten that this praise of a Protestant Queen was not among the least of his crimes in the eyes of his accusers. Still, even Elizabeth could not protect a heretic ; and Bruno’s audacious eloquence roused such opposition that he was forced to quit England. He returned to Paris, once more to court the favour of the *Quartier Latin*. He obtained permission to open a public disputation on the Physics of Aristotle. For three successive days did this dispute continue, in which the great questions of nature, the universe, and the rotation of the earth were discussed. Bruno had thrown aside the veil, and presented his opinions naked to the gaze. His impetuous onslaught upon established opinions produced the natural result ; he was forced again to fly.

We next find him in Germany, carrying the spirit of innovation into its august universities. In July, 1586, he matriculated as *theologiæ doctor Romanensis* in the university of Marburg, in Hesse ; but permission to teach philosophy

was refused him *ob arduas causas*. Whereupon he insulted the Rector in his own house, created a disturbance, and insisted that his name should be struck off from the list of members of the university. He set off for Würtemberg. His reception in this centre of Lutheranism was so gratifying, that he styled Würtemberg the Athens of Germany. ‘Your justice,’ he writes to the Senate, ‘has refused to listen to the insinuations circulated against my character and my opinions. You have with admirable impartiality permitted me to attack with vehemence that philosophy of Aristotle which you prize so highly.’ For two years did he teach there with noisy popularity, yet on the whole with tolerable prudence in not speaking against the peculiar views of Lutheranism. He even undertook a defence of Satan; but whether in that spirit of pity which moved Burns, or whether in the spirit of buffoonery which delights to play with awful subjects, we have no means of ascertaining. He did not offend his audience, in whatever spirit he treated the subject.

Here, then, in Würtemberg, with admiring audiences and free scope for discussion, one might fancy he would be at rest. Why should he leave so enviable a position? Simply because he was not a man to rest in ease and quiet. He was possessed with the spirit of a reformer, and this urged him to carry his doctrines into other cities. Characteristic of his audacity is the next step he took. From Würtemberg he went to Prague; from the centre of Lutheranism to the centre of Catholicism! In this he had reckoned too much on his own powers. He met with neither sympathy nor support in Prague. He then passed on to Helmstadt, where his fame having preceded him, the Duke of Brunswick conferred upon him the honourable charge of educating the hereditary Duke. Here again, if he had consented to remain quiet, he might have been what the world calls successful; but he was troubled with convictions—things so impedimental to success!—and these drew down upon him a sentence of excommunication. He justified himself, indeed, and the sentence was removed; but he was not suffered to remain

in Helmstadt; so he passed to Frankfort, and there in quiet retirement published three of his Latin works. He there found employment in the printing-house of Weichels, and lodged in the Carmelite monastery, whose prior greatly admired his genius and learning, though somewhat dubious as to his religious opinions. One of the many visitors to the Frankfort fair was a Venetian bookseller named Ciotto, who not only learned to know Bruno, but carried back with him to Venice such a report of his wonderful genius that it inflamed the curiosity of young Mocenigo—one of the family bearing that renowned name, but having none of the qualities which created the renown. Mocenigo having conceived the idea that Bruno could impart to him mysterious and valuable secrets, which were only vaguely indicated in Lully's arts printed in his pages, invited him to be his guest at Venice. With inexplicable precipitation Bruno at once quitted Frankfort (in the spring of 1591), and took up his abode in the palace of his young admirer. The disappointment on both sides was rapid. Mocenigo, either because irritated by Bruno's ill-concealed contempt of his abilities, or because he could get none of the expected illumination, denounced him to the Inquisition as a reprobate and heretic. The whole story is set forth by Signor Berti from unquestionable documents, and is one of surprising baseness.

We have the whole of the trial before the Inquisition circumstantially reported. There seems to have been no unfairness; and Bruno answered with singular frankness, both as to his life and his opinions. He did not deny that many things in his writings were contrary to the Catholic faith, and that he may have often expressed himself so as to cause scandal; but he added—and this is thoroughly in the spirit of the time—‘these things were never spoken by me *ex professo*, to impugn the Catholic faith, but were only in reference to philosophic arguments, or in illustration of heretical opinions.’ He emphatically denied having ridiculed the Apostles, or spoken of Christ with ribaldry, but avowed that his metaphysical opinions respecting the Trinity were not in harmony

with those of the Church. 'I do not think I ever argued on the incarnation, though I have indeed privately doubted how the Word could become flesh.' A bold avowal in such a place! What is specially noticeable here is the emphatic statement on his part that his arguments had only a *meta-physical* bearing, and that for himself he not only submits to the dogmatic theology of the Church, but that he disavows, abhors, and repents of all the erroneous opinions he may have expressed, and all the doubts he may have felt.* To a modern this appears unworthy equivocation. To a philosopher of that day it was a legitimate distinction. From the moment when Reason endeavoured in her way to solve the problems which had been already solved by the Church, such a distinction was forced upon all minds not prepared to disavow and altogether set aside the teaching of the Church. It is the same now with regard to positive Science, the conclusions of which, though flagrantly at variance with the express dogmas of the Church, are hospitably entertained in the minds of devoted servants of the Church. A striking example of the incongruity in earlier times is seen in the open profession of a disbelief in the immortality of the soul as a philosophical doctrine, on the part of public professors who nevertheless stood by the dogma of immortality.†

Bruno then, not wishing to be a victim, may have availed himself of the current equivocation without forfeiture of self-respect. He avowed his heresies, but declared his willingness to submit. It was the same with Galileo. Lovers of coincidences will find a piquant illustration in the fact that at the very moment when Bruno was thrown into prison, Galileo opened his course of mathematics at Padua.

Bruno's arrest was no sooner effected than intimation of it

* '... detesta ed abhorre tutti li errori che ha commessi sino al presente giorno pertinenti alla vita catholica, et tutte le heresie che ha tenute et li dubbi che ha avuti intorno alla fede catholica et alle cose determinate dalla santa Chiesa.'—BERTI: *Op. cit.* p. 263.

† See this illustrated in great detail in the able and instructive work of FRANCESCO FIORENTINO, recently published: *Pietro Pomponazzi; studi storici su la scuola Bolognese e Padovana del secolo XVI.* Florence, 1868.

was sent to the Grand Inquisitor San Severino, at Rome, who ordered that the prisoner should be sent to him, under escort, on the first opportunity. Thomas Morosini presented himself before the *Savi* of Venice, and demanded, in the name of his Eminence, that Bruno should be delivered up to him. 'That man,' said he, 'is not only a heretic, but an heresiarch. He has written works in which he highly lauds the Queen of England, and other heretical princes. He has written diverse things touching religion, which are contrary to the faith.' After some hesitation the request was granted, and granted, it would seem, in conformity with Bruno's own wish. On the 16th January 1593 (not 1598, as biographers have uniformly stated) he was transferred to the Roman prison. There he remained seven years. Why he remained so long a period uncondemned is a mystery. It may have been in the hope of extorting a retraction of the one heresy which seems to have been the direst offence, namely his opinion of the plurality of worlds. He had shown in Venice a willingness to submit himself to the Church on all points of dogma—would he not here submit to the Church on this point of science? Galileo, subsequently, availed himself of the subterfuge. Bruno refused. Finding him insensible to their threats and to their logic, they brought him, on the 9th of February, to the palace of San Severino; and there, in the presence of the cardinals and most illustrious theologians, he was forced to kneel and receive the sentence of excommunication. That sentence passed, he was handed over to the secular authorities, with a recommendation of a 'punishment as merciful as possible, and without effusion of blood'—*ut quam clementissimè et citra sanguinis effusionem puniretur*,—the atrocious formula for burning alive.

Calm and dignified was the bearing of the victim during the whole of this scene. It impressed even his persecutors. On hearing his sentence, one phrase alone disturbed the unalterable serenity of his demeanour. Raising his head with haughty superiority, he said, 'I suspect you pronounce this

sentence with more fear than I receive it.’* A delay of one week was accorded to him, in the expectation that fear might force a retraction; but the week expired, and Bruno remained immovable.

On the 17th February 1600, when the streets of Rome were crowded for the Jubilee, and no less than fifty cardinals were present, the crowd of pilgrims from many nations come to implore forgiveness of their sins, the stubborn sinner who would not disavow the horrible heresy of a plurality of worlds, which he had deduced from the Copernican hypothesis, was led to the stake erected in the Campo di Fiora, near the ancient theatre of Pompey. The fagots were lighted, while the hushed crowd looked on, many still hoping he would retract. In a little while the wind scattered the ashes of the resolute thinker, who in the martyr spirit, self-sustained and silent, welcomed death as the appointed passage to a higher life.

‘Fondo i cieli e a l’ infinito m’ ergo.’

Bruno perished the victim of theological stupidity and self-applauding intolerance. It is impossible to read of such a punishment without strong indignation and disgust. There are, indeed, no pages in the annals of mankind which we would more willingly blot out, than those upon which fanaticism has written its bloody history. Frivolous as have often been the pretexts for shedding blood, none are more abhorrent to us than those founded upon religious differences. Surely the question of religion is awful enough in itself. Men have the deepest possible interest in ascertaining the truth of it: and if they cannot read the problem aright by the light of their own convictions, will it be made more legible by the light of an *auto-da-fé*? Tolerance is still far from being a general virtue; but what scenes of struggle, of violence, and of persecution has the world passed through,

* ‘*Maggior timore provate voi nel pronunciar la sentenza contro di me, che non io nel riceverla.*’

before even the present modicum of tolerance could be gained ! In the sixteenth century, free thought was a crime. The wisest men were bitterly intolerant ; the mildest, cruel. Campanella tells us that he was fifty times imprisoned, and seven times put to the torture, for daring to think otherwise than those in power. It was an age of persecution. That which made it so bloody was the vehemence of the struggle between the old world and the new—between thought and established dogma—between science and tradition. In every part of Europe—in Rome itself—men uprose to utter their new doctrines, and to shake off the chains which enslaved human intellect. It was the first great crisis in modern history, and we read its progress by the bonfires lighted in every town. The glare of the stake reddened a sky illumined by the fair auroral light of Science.

Did Bruno deserve to die ? According to the notions of that age, he certainly did ; though historians have, singularly enough, puzzled themselves in the search after an adequate motive for so severe a punishment. He had praised heretical princes ; he had reasoned philosophically on matters of faith—properly the subjects of theology ; he had proclaimed liberty of thought and investigation ; he had refused to attend Mass ; he had repeated many buffooneries then circulating, which threw contempt upon sacred things ; finally, he had taught a system of Pantheism, which was altogether opposed to Christianity. He had done all this. But others before, and others afterwards, did this, yet escaped. He perished because he disputed the infallibility of the Church on points of Science, and taught that this Earth of ours on which the Saviour had been crucified, this Earth which the Church ruled, was not the pivot of the universe, was not the only world revolving in infinite space. Accordingly, the flames (as Scioppius sarcastically wrote in describing the execution to a friend) ‘carried him to those worlds which he imagined.’

‘As men die, so they walk among posterity,’ is the felicitous remark of Monckton Milnes ; and Bruno, like many other men,

is better remembered for his death than for anything he did while living. The sentence which consumed his body has embalmed his name. He knew it would be so—‘*La morte d’un secolo fa vivo in tutti gli altri.*’

Considered as a system of philosophy, we cannot hesitate in saying that Bruno’s has only an historical, not an intrinsic value. Its condemnation is written in the fact of its neglect. But taken historically, his works are very curious, and still more so when we read them with a biographical interest; for they not only illustrate the epoch, they exhibit the man,—exhibit his impetuosity, recklessness, vanity, imagination, buffoonery, his thoroughly Neapolitan character, and his sincere love of truth. Those who wish to see grave subjects treated with dignity, will object to the licence he allows himself, and will have no tolerance for the bad taste he so often displays. But we should rather look upon these works as the rapid productions of a restless athlete—as the improvisations of a full, ardent, but irregular mind, in an age when taste was less fastidious than it has since become. If Bruno mingled buffooneries and obscenities with grave and weighty topics, he therein only follows the general licence of that age; and we must extend to him the same forgiveness as to Bembo, Ariosto, Tansillo, and the rest. Plato himself is not wholly exempt from the same defect.

In adopting the form of dialogue, Bruno also followed the taste of his age. It is a form eminently suited to polemical subjects; and all his works were polemical. It enabled him to ridicule by turns the pedants, philosophers, and theologians; and to enunciate certain doctrines which even his temerity would have shrunk from, had he not been able to place them in the mouth of another. He makes his dialogues far more entertaining than works of metaphysics usually are; and this he does by digressions, by ridicule, by eloquence, and a liberal introduction of sonnets. Sometimes his very vivacity becomes wearisome. The reader is stunned and bewildered by the remorseless torrent of substantives and epithets which pours from his too prolific pen. There is nobody to

rival him, but Rabelais, in this flux of words.* His great butts are the clergy, and the philosophers. He reproaches the former with ignorance, avarice, hypocrisy, and the desire to stifle enquiry and prolong the reign of ignorance. The philosophers he reproaches with blind adherence to authority, with stupid reverence for Aristotle and Ptolemy, and with slavish imitation of antiquity. It should be observed that he does not so much decry Aristotle, as the idolatry of Aristotle.† Against the pedantry of that pedantic age he is always hurling his thunders. ‘If,’ says he, in one place, characterizing the pedant, ‘he laughs, he calls himself Democritus; if he weeps, it is with Heraclitus; when he argues, he is Aristotle; when he combines chimeras, he is Plato; when he stutters, he is Demosthenes.’ That Bruno’s scorn sprang from no misology, his own varied erudition proves. But while *he* studied the ancients to extract from them such eternal truths as were buried amidst a mass of error, *they*, the pedants, only studied how to deck themselves in borrowed plumes.

Turning from manner to matter, we must assign to Bruno a place in the history of philosophy, as a successor of the Neo-Platonists, and the precursor of Spinoza, Descartes, Leibnitz, and Schelling. That Spinoza and Descartes were actually conversant with the writings of Giordano Bruno does not distinctly appear. Yet it is not to be disputed that Bruno anticipated Spinoza in his conception of the *immanence* of the Deity, in his famous *natura naturans* and *natura naturata*, and in his pantheistic theory of evolution. He also anticipated Descartes’ famous criterium of truth, viz. that whatever is clear and evident to the mind, and does not

* To give the reader a taste of this quality, we will cite a sentence from the dedicatory epistle to *Gli Eroi Furori*: ‘Che spettacolo, o Dio buono! più vile e ignobile può presentarsi ad un occhio di terso sentimento, che un uomo cogitabundo, afflitto, tormentato, triste, maninconioso, per divenir or freddo, or caldo, or fervente, or tremante, or pallido, or rosso, or in mina di perplesso, or in atto di risoluto, un che spende il miglior intervallo di tempo destillando l’elixir del cervello con mettere scritto e sigillar in pubblici monumenti quelle continue torture, que’ gravi tormenti, que’ razionali discorsi, que’ fatuosi pensieri, e quelli amarissimi studi, destinati sotto la tirannide d’una indegna imbecille stolta e sozza sporcaria?’ Thus it continues for some fifty lines more!—*Opp. Ital.* ii. 299.

† Vide *Opp. Ital.* ii. 67, where this is explicitly stated.

admit of contradiction, must be true; and in his proclamation of Doubt as opposed to Authority, he thus insists upon Doubt as the starting-point: '*Chi vuol perfettamente giudicare deve saper spogliarsi de la consuetudine di credere, deve l' una e l' altra contraddittoria esistimare egualmente possibile, e dismettere a fatto quell' affezione di cui è imbibeto da natività.*'* Leibnitz was avowedly acquainted with Bruno's works, and may have derived therefrom his theory of monads. Schelling makes no secret of his obligations.

There is another merit in Bruno which should not be overlooked, that, namely, of giving a strong impulse to the study of Nature. Occupied with syllogisms about entities and quiddities, the philosophy of the Middle Ages had missed the great truth that 'man is the minister and interpreter of Nature.' Philosophy taught that the interpretation could proceed only from *within*; that men were to look into their own minds to analyse, subdivide, and classify their own ideas, instead of looking forth into Nature, and patiently observing her processes.† Bruno was one of the first to call men out into the free air. With his poetical instinct he naturally looked on Nature as the great book for man to read. He deified Nature; and looked upon the Universe as the garment of God, as the incarnation of the divine activity. Let not this be misunderstood, however. If Bruno embraced the Copernican theory, and combated the general physics of his day, he is not on that account to be mistaken for a follower of scientific Method. He espoused the correct view of the earth's sphericity and rotation; but he did so on the faith of his metaphysical theories, not on rigorous induction.

Bruno's creed was Pantheism. In many passages he names and alludes to Avicbron, whose *Fons Vitæ* he had studied with great sympathy, and from whom he may have borrowed

* *De l' Infinito Universo e Mondi: Opp. Ital.* ii. 84.

† It is of them TELESIO energetically says: '*Sed veluti cum Deo de sapientiâ contententes decertantesque, mundi ipsius principia et causas ratione inquirere ausi, et quæ non invenerant, inventa ea sibi esse existimantes, volentesque, veluti suo arbitratu, mundum affluxere.*'—*De Rerum Naturâ*, in *Proœm.*

certain pantheistic ideas. He taught that God was the Infinite Intelligence, the Cause of causes, the Principle of all life and mind; the great Activity, whose action we name the Universe. But God did not *create* the universe; he *informed* it with life—with being. He *is* the universe; but only as the cause is the effect, sustaining it, *causing* it, but not limited by it. He is self-existing, yet so essentially active as incessantly to manifest himself as a Cause. Between the supreme Being and the inferior beings dependent upon him, there is this distinction: He is absolutely simple, without parts; he is one whole, identical and universal; whereas the others are mere individual parts, distinct from the great Whole. Above and beyond the visible universe there is an Infinite Invisible,—an immovable, unalterable Identity, which rules over all diversity. This Being of Beings, this Unity of Unities, is God: ‘Deus est monadum monas, nempe entium entitas.’

Bruno says, that although it is impossible to conceive Nature separated from God, we can conceive God separated from Nature. The infinite Being is the essential centre and substance of the universe, but he is above the essence and substance of all things: he is *superessentialis*, *supersubstantialis*. Thus we cannot conceive a thought independent of a mind, but we can conceive a mind apart from any one thought. The universe is a thought of God’s mind—nay more, it is the infinite activity of his mind. To suppose the world finite is to limit his power. ‘Wherefore should we imagine that the Divine activity (*la divina efficacia*) is idle? Wherefore should we say that the Divine goodness, which can communicate itself *ad infinitum*, and infinitely diffuse itself, is willing to restrict itself? Why should his infinite capacity be frustrated—defrauded of its possibility to create infinite worlds? And why should we deface the excellence of the Divine image, which should rather reflect itself in an infinite mirror, as his nature is infinite and immense?’*

Bruno admits the existence of only one intelligence, and that

* *De l’ Infinito: Opp. Ital.* ii. 24.

is God.* *Est Deus in nobis*. This intelligence, which is perfect in God, is less perfect in inferior spirits; still less so in man; more and more imperfect in the lower gradations of created beings. But all these differences are differences of degree, not of kind. The inferior order of beings do not understand themselves, but they have a sort of language. In the superior orders of beings, intelligence arrives at the point of self-consciousness—they understand themselves, and those below them. Man, who occupies the middle position in the hierarchy of creation, is capable of contemplating every phasis of life. He sees God above him—he sees around him traces of the divine activity. These traces, which attest the immutable order of the universe, constitute the soul of the world. To collect them, and connect them with the Being whence they issue, is the noblest function of the human mind. Bruno further teaches that, in proportion as man labours in this direction, he discovers that these traces, spread abroad in nature, do not differ from the *ideas* which exist in his own mind.† He thus arrives at the perception of the identity between the soul of the world and his own soul, both as reflections of the Divine intelligence. He is thus led to perceive the identity of Subject and Object, of Thought and Being.

Such is the faint outline of a doctrine, to preach which Bruno became a homeless wanderer and a martyr; as he loftily says, ‘Con questa filosofia l’anima mi s’aggrandisce, e mi si magnifica l’intelletto.’

In five dialogues, *La Cena de le Ceneri*, he combats the

* DE MORGAN (*Companion to the Almanack*, 1855) says: ‘Among the versions of the cause of Bruno’s death is *atheism*: but this word was very often used to denote rejection of revelation, not merely in the common course of dispute, but by such writers, for instance, as Brucker and Morhof. Thus Morhof says of the *De Monade*, &c., that it exhibits no manifest signs of atheism. What he means by the word is clear enough, when he thus speaks of a work which acknowledges God in hundreds of places, and rejects opinions as blasphemous in several.’

† ‘ELP.: What is the purpose of the senses?—FIL.: Solely to excite the reason; to indicate the truth, but not to judge of it. Truth is in the sensible object as in a mirror; in the reason, as a matter of argument; in the intellect, as a principle and conclusion; but in the mind it has its true and proper form.’—*De l’Infinito*, p. 18.

hypothesis of the world's immobility; proclaims the infinity of the universe, and warns us against seeking its centre or circumference. He enlarges on the difference between appearances and reality in celestial phenomena; argues that our globe is made of the same substance as the other planets, and that everything which *is*, is living, so that the world may be likened to a huge animal.* In this work he also answers his objectors, who bring against his system the authority of Scripture, exactly in the same way as modern geologists answer the same objection, viz. by declaring that the revelation in the Bible was a moral, not a physical revelation: it did not pretend to teach science, but, on the contrary, adopted ordinary notions, and expressed itself in the language intelligible to the vulgar.† In this work there are some digressions more than usually interesting to us, because they refer to the social condition of England during Elizabeth's reign.

The two works, *De la Causa* and *De l' Infinito*, contain the most matured and connected exposition of his philosophical opinions. As our space will not admit of an analysis, we must refer to the one given by M. Bartholmess.‡ The *Spaccio de la Bestia Trionfante* is the most celebrated of all his writings. It was translated by Toland, in 1713, who printed only a very few copies, as if wishing it to fall into the hands of only a few choice readers. The very title has been a sad puzzle to the world, and has led to the strangest suppositions. The 'Triumphant Beast,' which Bruno undertakes to expel, is none other than this: ancient astronomy disfigured the heavens with animals as constellations, and under guise of expelling these, he attacks the great beast (Superstition) whose predominance causes men to believe that

* An idea borrowed from PLATO, who, in the *Timæus*, says, Οὕτως οὖν δὴ κατὰ λόγον τὸν εἰκότα δεῖ λέγειν τόνδε τὸν κόσμον ζῶον ἐμψυχον ἔνουν τε τῇ ἀληθείᾳ διὰ τὴν τοῦ θεοῦ γενέσθαι πρόνοιαν.—p. 26, ed. BEKKER. Compare also *Politicus*, p. 273. BRUNO may have taken this directly from PLATO, or he might have learned it from the work of his countryman, TELESIO, *De Rerum Naturâ*.

† 'Secondo il senso volgare et ordinario modo di comprendere e parlare.' The whole of the early portion of Dialogue 4 (in which this distinction is maintained) is worth consulting.—*Opere*, i. 172 sq.

‡ BARTHOLMESS: *Jordano Bruno*, ii. 128–154.

the stars influence human affairs. In his *Cabala del Cavallo Pegaseo*, he sarcastically calls the ass ‘la bestia trionfante viva,’ and indites a sonnet in praise of that respectable quadruped :

‘Oh sant’ asinità, sant’ ignoranza,
Santa stoltizia, e pia divozione,
Qual sola puoi far l’ anime sì buone
Ch’ uman ingegno e studio non l’ avanza !’ &c.

The *Spaccio* is an attack upon the superstitions of the day,—a war against ignorance, and ‘that orthodoxy without morality, and without belief, which is the ruin of all justice and virtue.’ Bruno fancifully calls Morality ‘the astronomy of the heart;’ did not Bacon call it ‘the *Georgics* of the mind’? The *Spaccio* is a strange medley of learning, imagination, and buffoonery; and on the whole, perhaps the most tiresome of all his writings. M. Bartholmess, whose admiration for Bruno greatly exceeds my own, says of it: ‘The mythology and symbolism of the ancients are there employed with as much tact as erudition. The fiction that the modern world is still governed by Jupiter and the court of Olympus, the mixture of reminiscences of chivalry, and the marvels of the middle ages, with the tales and traditions of antiquity—all those notions which have given birth to the philosophy of mythology, of religions, and of history—the Vicos and the Creuzers—this strange medley makes the *Spaccio* so interesting. The philosopher there speaks the noble language of a moralist. As each virtue in its turn appears to replace the vices which disfigure the heavens, it learns from Jupiter all it has to do, all it has to avoid: all its attributes are enumerated and explained, and mostly personified in the allegorical vein; all the dangers and excesses it is to avoid are characterised with the same vigour. Every page reveals a rare talent for psychological observation, a profound knowledge of the heart, and of contemporary society. The passions are subtly analysed and well painted. That which still more captivates the thoughtful reader is the sustained style of this long fiction, which may be regarded as a sort of philosophic sermon. Truth and wisdom, justice and candour,

take the place in the future now occupied by error, folly, and falsehood of every species. In this last respect the *Spaccio* has sometimes the style of the Apocalypse.'

Without impugning the justice of this criticism, I must add, that the *Spaccio* taxes even a bookworm's patience, and ought to be read with a liberal license in skipping.

Perhaps, of all his writings, *Gli Eroici Furori* is that which would most interest a modern reader, not curious about the philosophical speculations of the Neapolitan. Its prodigality of sonnets, and its mystic exaltation, carry us at once into the heart of that epoch of Italian culture when poetry and Plato were the great studies of earnest men. In it Bruno, avowing himself a disciple of Petrarch, proclaims a Donna more exalted than Laura, more adorable than all earthly beauty: that Donna is the imperishable image of Divine Perfection. It is unworthy of a man, he says, to languish for a woman; to sacrifice to her all those energies and faculties of a great soul, which might be devoted to the pursuit of the Divine. Wisdom, which is truth and beauty in one, is the idol adored by the genuine hero. Love woman if you will, but remember that you are also a lover of the Infinite. Truth is the food of every heroic soul; hunting for Truth the only occupation worthy of a hero.* The reader of Plato will trace here a favourite image; and was it not Berkeley who described Truth as 'the cry of all, but the game few run down'?

* See, in particular, the fine passage, *Opp. Ital.* ii. 406-7.

FIRST EPOCH.

Philosophy again separates itself from Theology, and seeks the aid of Science.

CHAPTER I.

BACON AND DESCARTES.

IN the evolution of Philosophy, as in the evolution of an organism, it is impossible to fix with any precision a period of origin, because every beginning is also a termination, and resumes the results of a whole series of preceding evolutions. As Mr. Spedding felicitously says, our Philosophy ‘was born about Bacon’s time, and Bacon’s name (as the brightest which presided at the time of its birth) has been inscribed upon it:

Hesperus that led
The starry host rode brightest.

Not that Hesperus did actually *lead* the other stars; he and they were moving under a common force, and they would have moved just as fast if he had been away; but because he shone brightest, he *looked* as if he led them.’* Bacon and Descartes are generally recognised as the Fathers of Modern Philosophy, though they themselves were carried along by the rapidly-swelling current of their age, then decisively setting in the direction of Science. It is their glory to have seen visions of the coming greatness, to have expressed in

* Bacon’s Works, 1857, I. 374.

terms of splendid power the thoughts which were dimly stirring the age, and to have sanctioned the new movement by their authoritative genius. The destruction of Scholasticism was complete. They came to direct the construction of a grander temple.

There are in these two thinkers certain marked features of resemblance, and others of difference equally marked. We see their differences most strikingly in their descendants. From Bacon lineally descended Hobbes, Locke, Diderot, D'Alembert, Condillac, Cabanis, our Scotch School, and Comte. From Descartes descended Spinoza, Malebranche, Leibnitz, Fichte, Schelling, and Hegel. The Inductive Method predominated in the one school, the Deductive in the other. These differences we shall recognise more fully later on: at present we may fix our minds on the two great points of resemblance: 1st, the decisive separation of Philosophy from Theology; 2nd, the promulgation of a new Method.

There have been discussions respecting Bacon's orthodoxy which I do not meddle with here, since, whether his occasional declarations were sincere, or were only the lip-homage which men in those days paid the Church, nothing is more certain than that he quietly excluded Theology from his scheme, telling the King why he did so. 'If I proceed to treat of it, I shall step out of the bark of human reason, and enter into the ship of the Church; which is only able by the Divine compass to rightly direct its course. Neither will the stars of philosophy which have hitherto so nobly shone upon us, any longer supply their light, so that on this subject it will be as well to keep silence.'* Again, 'Sacred Theology ought to be derived from the word and oracles of God, and not from the light of nature or the dictates of human reason.' And in the corresponding part of the *Advancement of Learning*, he says: 'The use of human reason in religion is of two sorts: the former in the conception and apprehension of the mysteries of God to us revealed; the other in the

* *De Augmentis*, book ix. c. 1.

inferring and deriving of doctrine and direction thereupon. The former extendeth to the mysteries themselves, but how? by way of illustration, not by way of argument.' *

The spirit of his Philosophy was antagonistic to Theology, for it was a spirit of doubt and search; and its search was for visible and tangible results. Neither the ingenuities of logicians, nor the passionate earnestness of theologians, in that age of logicians and theologians, could lure him from his path. 'He lived in an age,' says Lord Macaulay, 'in which disputes on the most subtle points of divinity excited an intense interest throughout Europe, and nowhere more than in England. He was placed in the very thick of the conflict. He was in power at the time of the Synod of Dort, and must for months have been daily deafened with talk about election, reprobation, and final perseverance; yet we do not remember a line in his works from which it can be inferred that he was either a Calvinist or an Arminian. While the world was resounding with the noise of a disputatious theology and a disputatious philosophy, the Baconian School, like Allworthy seated between Thwackum and Square, preserved a calm neutrality, half scornful, half benevolent, and, content with adding to the sum of practical good, left the war of words to those who liked it.'

Descartes, though his constitutional timidity suppressed everything like overt hostility against the Church, was not less emphatically opposed to the theological spirit. He disengaged Philosophy from Theology by treating it as an independent topic, and by treating it on a Method which was in its essence destructive of all Theology, for it proceeded on a basis of absolute Doubt. The reign of Authority was proclaimed at an end. All the notions, all the hypotheses, all the beliefs which had filled the perplexed soul were to be ejected, and a new beginning was to be made from absolute Doubt, nothing accepted till it was proved, nothing proved by authorities, but all by reasons. The clearance here was more

* *Works*, iii. 479.

than a clearance from scholastic argumentation and Aristotelian tradition, it was a sweeping away of all Authority whatever, succeeded by the installation of Reason as supreme arbiter. Nay, he went beyond Bacon in this respect, since he wished to introduce Reason even into the domain of Theology: 'I have always thought,' he says in the dedication of his *Meditations* to the Sorbonne, 'that the two questions of the existence of God and the nature of the soul (two questions Bacon wisely left untouched) were the chief of those which ought to be demonstrated rather by philosophy than by theology; for although it is sufficient for us, the faithful, to believe in God and that the soul does not perish with the body, it certainly does not seem possible ever to persuade the infidels to any religion, nor hardly to any moral virtue, unless we first prove to them these two things by natural reason.'

While thus encroaching on the domain of Theology, he allowed no theological encroachments on Philosophy; and in promulgating his hypothesis of the vortices, he remarks that although we know for certain that God created the world at once, yet it would be of eminent interest to see how the world *might* have been evolved. Having protected himself by this *précaution oratoire*, he proceeds with his hypothesis, and explains the world wholly without reference to God. In like manner God is assumed as the first cause of motion, but his presence is never afterwards indicated.

The separation of Philosophy from Theology is made emphatic in the rejection of Final Causes by both Bacon and Descartes. The latter says, 'Nous rejetterons entièrement de notre philosophie la recherche des causes finales; car nous ne devons pas tant présumer de nous-mêmes que de croire que Dieu nous ait voulu faire part de ses conseils;' and again: 'Tout ce genre de causes qu'on a coutume de tirer de la fin n'est d'aucun usage dans les choses physiques et naturelles.' He left them for theologians, declaring that in Physics, where every conclusion must rest on solid grounds, the appeal to final causes is inept.

But perhaps the most effective of all the novelties was the

effort of Descartes to explain the system of the world by Matter and Motion only, thus quietly setting aside all causes and metaphysical entities which had hitherto been invoked. The hypothesis of vortices was indeed soon disclosed to be untenable; but the scientific attitude from which that hypothesis proceeded was never afterwards relinquished. It was a bold attempt at the application of the Objective Method, and was only defective in its restriction to Cosmology, and its exclusion of Biology, which was still left to the Subjective Method, as I shall presently notice.

The second point on which Bacon and Descartes resemble each other is in their conception of the results to be achieved by a totally new Method. Coming as they did on the top of the revolutionary wave which had washed away the old methods, seeing as they saw the striking results of physical research, and foreseeing yet more glorious conquests from the spirit which achieves those results, they yielded themselves to the pleasant illusion that a new Method would rapidly solve all problems. Bacon, as the more magnificent and imaginative mind, had grander visions, and more enthusiastic faith; but Descartes also firmly believed that the new Method was to do wonders. Indeed, it is interesting to note how these great intellects seem quite unconscious of their individual superiority, and are ready to suppose that their Method will equalise all intellects. It reminds us of Sydney Smith maintaining that any man might be witty if he tried. Descartes affirms that 'it is not so essential to have a fine understanding as to apply it rightly. Those who walk slowly make greater progress if they follow the right road than those who run swiftly on a wrong one.' To the same effect Bacon: 'A cripple on the right path will beat a racer on the wrong one.' This is true enough, but is beside the question. Equipped with good or bad instruments, the superiority of one worker over another is always made manifest; and it is precisely in the right use of a good Method that the scientific genius is called upon for its delicate and patient skill.

CHAPTER II.

BACON.

INTO the vexed questions of Bacon's conduct both with regard to Essex and with regard to bribery, I cannot enter here ; but referring the curious to his biographers and critics, I will simply note that he was born in 1561 ; was educated at Trinity College, Cambridge, where he learned to distrust the Aristotelianism of his masters, and planned his own vast scheme of reform ; went to Paris ; sat in Parliament as member for Middlesex ; was successively appointed of the Privy Council, and Lord Chancellor ; was created Viscount Verulam ; was impeached and condemned for corruption as a judge ; and died in the spring of 1626. 'For my name and memory,' said the dying man, 'I leave it to men's charitable speeches, and to foreign nations, and the next age.'

Posterity has been generous ; the fame of Bacon is immense. Admirers have not always been unanimous as to his special claims ; but there has been no lack of enthusiasm, no questioning of his genius. He has been lauded for achievements in which he had no part, and has been adorned with titles to which he had doubtful pretensions ; while his most important services have been overlooked. But the general recognition of his greatness, and our national pride in it, have not prevented certain attacks on his reputation, which have been answered in a rather angry spirit ; and thus from one cause and another there is great difficulty in arriving at any candid and thorough appreciation of the work he did. It seems to some persons that Bacon did very little in rising against the philosophy of his day, and pointing out a new

path; and to others it seems that he did nothing of the kind. But whoever looks closely into the writings of Bacon's predecessors will see that what now seems obvious and trivial, was then startling and important. As M. Rémusat felicitously says, 'il fallait du génie pour avoir ce bon sens.'* And to those who deny that Bacon did head the revolution, I would oppose not simply the testimony of nearly three centuries, but the testimony of Gassendi, who, both as contemporary and a foreigner, was capable of judging the effect then produced.† It is indeed apparent to any one familiar with the writings of some of Bacon's immediate predecessors, especially Galileo, that there was little novelty in his denunciations of the erroneous Method then popular, or in his exhortations to pursue Observation, Experiment, and Induction. But it is not less apparent that he had wider and profounder views of the philosophy of Method than any of them, and that the popular opinion does not err in attributing to him the glory of heading the new era.

In England he is commonly regarded as the Father of Experimental Philosophy, and the originator of the Inductive Method. Men profess themselves followers of the 'Baconian Philosophy,' sometimes confounding that with a servile attention to facts and a most unscientific scorn of theories; at other times implying that by the Baconian Method is to be understood the one on which Science has successfully been pursued. A rigorous investigation of Bacon's claims will disclose that he was rather one who sounded the trumpet-call than one who marshalled the troops. He insisted on the importance of Experiment, but he could not teach what he did not himself understand—the Experimental Method. He exhorted men to study Nature; but he could not give available directions for that study. He had fervent faith in the possible conquests of Science; but never having thoroughly mastered any one science, he

* RÉMUSAT: *Bacon, sa vie, son temps, sa philosophie et son influence*. Paris, 1857, p. 400.

† GASSENDI: *Opera*, 1658, i. 62.

was incapable of appreciating the real conditions of research. He saw clearly enough the great truth that the progress of research must be gradual, but he did not see what were the necessary grades, he did not see the kind of inquiries, and the order they must follow, before discoveries could be made. That he had really but vague and imperfect conceptions of Scientific Method is decisively shown by his contemptuous rejection of Copernicus, Galileo, and Gilbert, and by his own plan of an investigation into Heat. One sentence alone would suffice to show this, namely, his sneer at Copernicus as ‘a man who thinks nothing of introducing fictions of any kind into nature, provided his calculations turn out well:’ Bacon did not understand, what Copernicus profoundly saw, that the only value of an hypothesis was its reconciliation of calculations with observations. In his plan for an *Inquisition into the Nature of Heat*, we see a total misconception of the scientific process: not only does he set about it in a laboriously erroneous way, but he seeks that which Science proclaims inaccessible, the *nature* of heat. It is true that he arrives at an hypothesis which bears some resemblance to the hypothesis now accepted, namely, that heat is a mode of motion—‘an expansive and restrained motion, modified in certain ways, and exerted in the smaller particles of the body.’ But those who have been eager to credit him with an anticipation of modern views on the strength of this definition, have overlooked the fact that it is incapable of explaining a single process, includes none of the ascertained laws of phenomena, and is itself an example of the illicit generalization which Bacon elsewhere condemns.* It was with some justification, therefore, that Harvey, who knew what science was, and knew better than most men how discoveries were made, said of him that he wrote of science like a Lord Chancellor.

Indeed it is to mistake his position, and his greatness altogether, to attribute his influence on Philosophy, which is undeniable, to an influence on Science which is more than

* *WHEWELL: Philos. of Discovery*, p. 137.

questionable. Bacon was a philosopher; but because with him Philosophy, separating itself from the bondage of Theology, claimed to ally itself with Science, and sought its materials in the generalities of Science, those writers who have never made a very accurate distinction between the two, but have confounded Philosophy with Metaphysics, and Science with Physics, have naturally regarded Bacon as the precursor of Newton, Laplace, Faraday, and Liebig. It is in vain that critics oppose such a claim by asserting what is undeniable, that the great discoveries in modern science were neither made on Bacon's method,* nor under any direct guidance from him—that Copernicus, Galileo, and Kepler preceded him, that Harvey and Newton ignored him—stanch admirers have their answer ready: they know that Bacon was the herald of the new era, and they believe that it was his trumpet-call which animated the troops, and led them to victory.

Nor can any one pretend to estimate the influence of such a trumpet-call as Bacon's. He is one of the most striking illustrations of that Literature of Power, of which mention has already been made.† His distinguishing characteristic is a large opulence of mind, at once massive and florid, wide-sweeping and subtle; and the main source of his influence has been the dignity with which he invested the objective mode of looking at things, a mode liable to degenerate into a creeping prosaism and trivial love of detail, a mode wanting also in the attractions of a facile, though illusory, subjective tendency, but the only mode of reaching truth and consequently of securing the solid grandeur of permanent results. Under Bacon's eloquent teaching men began to see that they were working nobly, as well as working usefully, in limiting their researches to realities, foregoing the delusive hopes of metaphysics, proceeding

* 'That this method is impracticable,' says Mr. ELLIS, 'cannot, I think, be denied, if we reflect not only that it never has produced any result, but also that the process by which scientific truths have been established cannot be so presented as even to appear to be in accordance with it.'—*Bacon's Works*, i. 38.

† See vol. i. p. 225.

cautiously, and checking the native impatience of the mind. Galileo, both by precept and example, had shown them a victorious method of research: but Galileo did not *dignify* that method in their eyes; he did not raise it into Philosophy. Bacon, weak in Science, was strong in the Philosophy which sought materials in Science.* There was, and still is, an instinctive antagonism between philosophers and savans: the philosophers complaining that Science is too narrow in its scope, the savans proclaiming that Philosophy is too vague in its principles. Bacon was the first to conceive a Philosophy of the Sciences. He did this when he proclaimed that Physics was 'the mother of all the sciences.' That this was greatly in advance of his age may be gathered from the fact of its to this day remaining a heresy: the notion of ethics and politics having the same methods, and being susceptible of the same treatment as physics, is by the majority looked upon as fanciful, if not absurd.

Speaking of the causes of errors in preceding philosophers, Bacon says, 'A second cause of very great moment is that through all those ages wherein men of genius and learning principally or even moderately flourished, the smallest part of human industry has been spent upon natural philosophy, though this ought to be esteemed as the great mother of the sciences; for all the rest, if torn from this root, may perhaps be polished and formed for use, but can receive little increase. . . .

'But let none expect any great promotion of the sciences, especially in their effective part, *unless natural philosophy be drawn out to particular sciences; and, again, unless these particular sciences be brought back again to natural philosophy.* From this defect it is that astronomy, optics, music, many mechanical arts, and what seems stranger, *even moral and*

* HALLER well says: 'Bacon's Vergleichung mit Galiläi ist höchst ungerecht; der letztere war freilich ein besserer Mathematiker und Kenner der Sterne; aber er war auf wenige Wissenschaften eingeschränkt, und Bacon übersah sie alle wie ein Wesen von einem höheren Orden, und wie noch Niemand sie vor ihm angesehen hatte.' Cited by BÖHMER: *Ueber Francis Bacon von Verulam*. Erlangen: 1864, p. 22.

civil philosophy and logic, rise but little above the foundations, and only skim over the varieties and surfaces of things, viz. because after these particular sciences are formed and divided off, they are no longer nourished by natural philosophy, which might give them strength and increase; and therefore no wonder if the sciences thrive not, when separated from their roots.' *

By thus bringing Science out of its laboratories into the general field of thought, and by bringing Philosophy out of its Schools into the workshops of research, Bacon really introduced the new era. Dr. Whewell well says that 'a revolution was going on, as all the greatest physical investigators of the sixteenth century were fully aware. But their writings conveyed this conviction to the public at large very slowly. Men of letters, men of rank, men of the world did not become familiar with the abstruse works in which these views were published; and above all they did not by such occasional glimpses as they took of the state of physical science become aware of the magnitude and importance of this change. But Bacon's lofty eloquence, wide learning, comprehensive views, bold pictures of the coming state of things, were fitted to make men turn a far more general and earnest gaze upon the passing change. When a man of his acquirements, of his talents, of his rank and position, of his gravity and caution, poured forth the strongest and loftiest expressions and images which his mind could supply in order to depict the "great Instauration" which he announced; in order to contrast the weakness, the blindness, the ignorance, the wretchedness under which men had laboured while they followed the long beaten track, with the light, the power, the privileges which they were to find in the paths to which he pointed; it was impossible that readers of all classes should not have their attention arrested, their minds stirred, their hopes warmed, and should not listen with wonder and pleasure to the strains of prophetic eloquence in which so great a subject was presented.' †

* *Novum Organum*, i. Aph. 79, 80.

† WHEWELL: *Philos. of Discovery*, p. 127.

It was Bacon's constant endeavour, as it has been the cause of his enduring fame, to teach men the real object of research, and the scope of their faculties, and to furnish them with a proper Method whereon these faculties might be successfully employed. He thus not only stands clearly out in history as the exponent of the long agitated antagonism to all the ancient and scholastic thinkers, but also as the exponent of the rapidly increasing tendency towards positive science. He is essentially modern. All his predecessors, even in their boldest attacks upon ancient philosophy, were themselves closely allied to the spirit of that which they opposed. But Bacon was modern in culture, in object, and in method. He attacked the ancient philosophy without having thoroughly understood it: he attacked it because he saw that a method which conducted great intelligences to such absurd conclusions as those then in vogue must necessarily be false.

'Whence can arise,' he asks, 'such vagueness and sterility in all the physical systems which have hitherto existed in the world? It is not certainly from anything in nature itself; for the steadiness and regularity of the laws by which it is governed clearly mark them out as objects of precise and certain knowledge.

'Neither can it arise from any want of ability in those who have pursued such inquiries, many of whom have been men of the highest talent and genius of the ages in which they lived; and it can therefore arise from nothing else but the perverseness and insufficiency of the methods which have been pursued. Men have sought to make a world from their own conception, and to draw from their own minds all the materials which they employed; but if, instead of doing so, they had consulted experience and observation, they would have had facts, and not opinions, to reason about, and might have ultimately arrived at the knowledge of the laws which govern the material world.

'As things are at present conducted, a sudden transition is made from sensible objects and particular facts to general propositions, which are accounted principles, and round

which, as round so many fixed poles, disputation and argument continually revolve. From the propositions thus hastily assumed, all things are derived by a process compendious and precipitate, ill suited to discovery, but wonderfully accommodated to debate.

‘The way that promises success is the reverse of this. It requires that we should generalize slowly, going from particular things to those that are but one step more general: from those to others of still greater extent, and so on to such as are universal. By such means we may hope to arrive at principles, not vague and obscure, but luminous and well-defined, such as Nature herself will not refuse to acknowledge.’

Having thus indicated his position, it will be necessary to give a brief outline of the Method which he confidently believed was to be infallible and applicable in all inquiries. This was imperatively needed: ‘for let a man look carefully into all that variety of books with which the arts and sciences abound, he will find everywhere endless repetitions of the same thing, varying in the method of treatment, but not new in substance, insomuch that the whole stock, numerous as it appears at first view, proves on examination to be but scanty. What was asserted once is asserted still, and what was a question once is a question still, and, instead of being resolved by discussion, is only fixed and fed.’ He proposes his new Method, that thereby ‘the intellect may be raised and exalted and made capable of overcoming the difficulties and obscurities of nature. The art which I introduce with this view (which I call the *Interpretation of Nature*) is a kind of logic, though the difference between it and the ordinary logic is great, indeed immense. For the ordinary logic professes to contrive and prepare helps and guards for the understanding as mine does; and in this one point they agree. But mine differs from it in three points: viz. in the end aimed at, in the order of demonstration, and in the starting point of inquiry. . . . But the greatest change I introduce is in the form itself of induction and the judgments made thereby.

For the induction of which the logicians speak, which proceeds by simple enumeration, is a puerile thing; concludes at hazard, is always liable to be upset by a contradictory instance, takes into account only what is known and ordinary, and leads to no result. Now what the sciences stand in need of is a form of induction which shall analyse experience and take it to pieces, and by a due process of exclusion and rejection lead to an inevitable conclusion.' . . . 'Now my method, though hard to practise, is easy to explain; and it is this—I propose to establish progressive stages of certainty. The evidence of sense helped and guarded by a certain process of correction, I retain: but the mental operation which follows the act of sense I for the most part reject; and instead of it I open and lay out a new and certain path for the mind to proceed in, starting directly from the simple sensuous perception.'

Before expounding the rules which he proposes he enumerates the four sources of error, the idols as he terms them. He considered this enumeration as the more necessary, that the same idols were likely to return, even after the reformation of science.

These idols he divides into four classes, viz. :—

<i>Idola Tribûs</i>	Idols of the Tribe.
<i>Idola Spectûs</i>	Idols of the Den.
<i>Idola Fori</i>	Idols of the Forum.
<i>Idola Theatri</i>	Idols of the Theatre.

1. The *Idols of the Tribe* are the causes of error founded on human nature in general. 'The mind,' he observes, 'is not like a plane mirror, which reflects the images of things exactly as they are; it is like a mirror of an uneven surface, which combines its own figure with the figures of the objects it represents.'

Among the idols of this class we may reckon the propensity which there is in all men to find a greater degree of order, simplicity, and regularity than is actually indicated by observation. Thus as soon as men perceived the orbits of the planets to return into themselves, they supposed them to be perfect circles, and the motion in those circles to be

uniform; and to these hypotheses the astronomers and mathematicians of all antiquity laboured incessantly to reconcile their observations.

The propensity which Bacon has here characterised may be called the *spirit of system*.

2. The *Idols of the Den* are those which spring from the peculiar character of the individual. Besides the causes of error common to all mankind, each individual has his own dark cavern, or den, into which the light is imperfectly admitted, and in the obscurity of which a tutelary idol lurks, at whose shrine the truth is often sacrificed.

Some minds are best adapted to mark the differences of things, others to catch at the resemblances of things. Steady and profound understandings are disposed to attend carefully, to proceed slowly, and to examine the most minute differences; while those that are sublime and active are ready to lay hold of the slightest resemblances. Each of these easily runs into excess; the one by catching continually at distinctions, the other at affinities.

3. The *Idols of the Forum* are those which arise out of the intercourse of society, and those also which arise from language.

Men believe that their thoughts govern their words; but it also happens by a certain kind of reaction that their words frequently govern their thoughts. This is the more pernicious, that words, being generally the work of the multitude, divide things according to the lines most conspicuous to vulgar apprehensions. Hence, when words are examined, few instances are found in which, if at all abstract, they convey ideas tolerably precise and defined.

4. The *Idols of the Theatre* are the deceptions which have arisen from the dogmas of different schools.

As many systems as existed, so many representations of imaginary worlds had been brought upon the stage. Hence the name of *Idola Theatri*. They do not enter the mind imperceptibly like the other three; a man must labour to acquire them, and they are often the result of great learning and study.

After these preliminary discussions Bacon proceeds, in the Second Book of his *Organum*, to describe and exemplify the nature of induction.

The first object must be to prepare a history of the phenomena to be explained, *in all their modifications and varieties*. This history is to comprehend not only all such facts as spontaneously offer themselves, but all *the experiments instituted for the sake of discovery*, or for any of the purposes of the useful arts. It ought to be composed with great care; the facts accurately related and distinctly arranged; their authenticity diligently examined; those that rest on doubtful evidence, though not rejected, yet noted as uncertain, with the grounds of the judgment so formed. This last is very necessary, for facts often appear incredible only because we are ill-informed, and cease to appear marvellous when our knowledge is further extended. This record of facts is *Natural History*.

The Natural History being prepared of any class of phenomena, the next object is to discover, by a comparison of the different facts, the *cause* of these phenomena, or, as Bacon calls it, the *form*. The form of any quality in a body is something convertible with that quality; that is, where it exists the quality exists: thus, if transparency in bodies be the thing inquired after, the *form* of it is something found wherever there is transparency. Thus *form* differs from *cause* in this only: we call it form or essence when the effect is a permanent quality; we call it *cause* when the effect is a change or an event.

Two other subjects, subordinate to *forms*, but often essential to the knowledge of them, are also occasionally subjects of investigation. These are the latent process, *latens processus*; and the latent schematism, *latens schematismus*. The former is the secret and invisible progress by which sensible changes are brought about, and seems in Bacon's acceptation to involve the principle since called the *law of continuity*, according to which no change however small can be effected but in *time*. To know the relation between the time and the change effected in it would be to have a perfect

knowledge of the latent process. In the firing of a cannon, for example, the succession of events during the short interval between the application of the match and the expulsion of the ball constitutes a latent process of a very remarkable and complicated nature, which however we can now trace with some degree of accuracy.

The latent schematism is that invisible structure of bodies on which so many of their properties depend. When we inquire into the constitution of crystals, or into the internal structure of plants, etc. we are examining into the latent schematism.

In order to inquire into the form of anything by induction, having brought together all the facts, we are to begin with considering what things are thereby *excluded* from the number of possible forms. This conclusion is the first part of the process of induction. Thus, if we are inquiring into the quality which is the cause of transparency in bodies; from the fact that the diamond is transparent, we immediately exclude rarity or porosity as well as fluidity from these causes, the diamond being a very solid and dense body.

Negative instances, or those where the *form* is wanting, to be also collected. That glass when pounded is not transparent is a negative fact when the form of transparency is inquired into; also that collections of vapours have not transparency. The facts thus collected, both negative and affirmative, should, for the sake of reference, be reduced to tables.

After a great many exclusions have been made, and left but few principles common to every case, one of these is to be assumed as the cause; and by reasoning from it synthetically we are to try if it will account for the phenomena. So necessary did this exclusive process appear to Bacon that he says, 'It may perhaps be competent to angels or superior intelligences to determine the form or essence directly, by affirmations from the first consideration of the subject; but it is certainly beyond the power of man, to whom it is only given to proceed at first by negatives, and in the last place to end in *affirmatives*, after the exclusion of everything else.'

There is, however, great difference in the value of facts. Some of them show the thing sought for in the highest degree, some in the lowest, some exhibit it simple and uncombined, in others it appears confused with a variety of circumstances. Some facts are easily interpreted, others are very obscure, and are understood only in consequence of the light thrown on them by the former. This led Bacon to his consideration of *Prerogative Instances*, or the comparative value of facts as means of discovery. He enumerates twenty-seven different species; but we must content ourselves with giving only the most important.

I. *Instantiæ solitariae*: which are either examples of the same quality existing in two bodies otherwise different or of a quality differing in two bodies otherwise the same. In the first instance the bodies differ in all things but one. In the second they agree in all but one. Thus if the cause or *form* of colour be inquired into, *instantiæ solitariae* are found in crystals, prisms, drops of dew, which occasionally exhibit colour, and yet have nothing in common with the stones, flowers, and metals which possess colour permanently except the colour itself. Hence Bacon concludes that colour is nothing else than a modification of the rays of light produced in the first case by the different degrees of incidence; and in the second by the texture or constitution of the surface of bodies. He may be considered as very fortunate in fixing on these examples, for it was by means of them that Newton afterwards found out the composition of light.

II. The *instantiæ migrantes* exhibit some property of the body passing from one condition to another, either from less to greater or from greater to less; arriving nearer perfection in the first case, or verging towards extinction in the second.

Suppose the thing inquired into were the cause of whiteness in bodies: an *instantia migrans* is found in glass, which entire is colourless, but pulverised becomes white. The same is the case with water unbroken or dashed into foam.

III. The *instantiæ ostensivæ* are the facts which show

some particular property in its highest state of power and energy, when it is either freed from impediments which usually counteract it or is itself of such force as entirely to repress those impediments.

If the weight of air were inquired into, the Torricellian experiment, or the barometer, affords an *ostensive instance*, where the circumstance which conceals the weight of the atmosphere in common cases, namely the pressure of it in all directions, being entirely removed, that weight produces its full effect, and sustains the whole column of mercury in the tube.

IV. The *instances* called *analogous* or *parallel* consist of facts between which a resemblance or analogy is visible in some particulars, notwithstanding great diversity in all the rest. Such are the telescope and microscope compared to the eye. It was the experiment of the camera obscura which led to the discovery of the formation of images of external objects in the bottom of the eye by the action of the crystalline lens, and other humours of which the eye is formed.

V. *Instantiæ comitatûs*: examples of certain qualities which always accompany one another. Such are flame and heat: flame being always accompanied by heat, and the same degree of heat in a given substance being always accompanied with flame.

Hostile instances, or those of perpetual separation, are the reverse of the former. Thus transparency and malleability in solids are never combined.

VI. The *instantia crucis*. When in any investigation the understanding is placed *in æquilibrio*, as it were, between two or more causes, each of which accounts equally well for the appearances as far as they are known, nothing remains to be done, but to look out for a fact which can be explained by one of these causes and not by the other. Such facts perform the office of a cross, erected at the separation of two roads, to direct the traveller which to take: hence called *crucial instances*.

The *experimentum crucis* is of such weight in matters of

induction that in all those branches of science where it cannot be resorted to (an experiment being out of our power and incapable of being varied at pleasure) there is often a great want of conclusive evidence.*

It is needless to criticise at any length a set of rules which the experience of two centuries has shown to be inapplicable; yet we may point to numerous passages in his works which were not only valuable in those days but continue valuable in our own. Especially noticeable is the emphasis with which he insists on a graduated and successive induction, as opposed to the hasty leaping from single facts to wide generalisations, which continues and will ever continue to be a constant source of error, and belongs to our native infirmity. There is a slight defect in his formula, which is too vague. Had he said, 'graduated Verification of inductions,' he would have hit the precise mark; for a series of inductions may be gradual and successive, yet hypothetical and erroneous; it is the Verification of each step that alone can ensure certainty. And it is worth remarking in this connection that, having imperfectly grasped the principle of Verification, he was led to misconceive the value of facts, seeming to think that quantity was of more service than quality; which every investigator knows to be wholly wrong. Thus when he blames the philosophers for theorising on a few facts, and calls their 'illicit generalisations' an anticipation of nature, he is right enough in the particular case, but vague and even wrong in principle; since a few facts of one quality are worth hundreds of another quality, and the hypothesis which he calls rash may be true, although anticipating the tardy process of proof. All depends on the validity of the facts and verification of the hypothesis. One radical defect of the method lies in its being *inductive*, and not also *deductive*. He was so deeply impressed with a sense of the insufficiency of the Deductive Method alone, which he saw his contemporaries pursuing, and which he knew to be the cause of the failure of his predecessors, that he bestowed all his attention on the Inductive Method. His

* Abridged from PLAYFAIR'S *Dissertation*.

want of mathematical knowledge had also no small share in this error. Although, however, it may be justly said that he did not sufficiently exemplify the Deductive Method, it is not correct to say that he entirely neglected it. Those who assert this forget that the second part of the *Novum Organum* was never completed. In the second part it was his intention to treat of Deduction, as is plain from the following passage: ‘The indications for the interpretation of Nature include two general parts. The first relates to the raising of Axioms from experience; and the second, to the *deducing or deriving of new experiments from Axioms* (de ducendis aut derivandis experimentis novis ab axiomatibus).’* We here see that he comprehended the twofold nature of the method; but inasmuch as he did not publish the second part of his *Organum*, we may admit the remark of Professor Playfair, that ‘in a very extensive department of physical science, it cannot be doubted that investigation has been carried on, not perhaps more easily, but with a less frequent appeal to experience, than the rules of the *Novum Organum* would seem to require. In all physical inquiries where mathematical reasoning has been employed, after a few principles have been established by experience, a vast multitude of truths, equally certain with the principles themselves, have been deduced from them by the mere application of geometry and algebra. . . . The strict method of Bacon is therefore only necessary where the thing to be explained is new, and where we have no knowledge, or next to none, of the powers employed.’†

His deficiency in mathematical knowledge caused him to overlook the equal importance of Deduction and Induction:— ‘Bacon has judiciously remarked that the *axiomata media* of every science principally constitute its value. The lowest generalisations, until explained by and resolved into the middle principles, of which they are the consequences, have only the imperfect accuracy of empirical laws; while the most general laws are *too general*, and include too few circumstances

* *Novum Organum*, ii. Aph. 10.

† *Dissertation prefixed to the Encyclop. Britannica*, pp. 58, 61.

to give sufficient indication of what happens in individual cases, where the circumstances are almost always immensely numerous. In the importance therefore which Bacon assigns, in every science, to the middle principles, it is impossible not to agree with him. But I conceive him to have been radically wrong in his doctrine respecting the mode in which these *axiomata media* should be arrived at; although there is no one proposition in his works for which he has been so extravagantly eulogised. He enunciates, as a universal rule, that induction should proceed from the lowest to the middle principles, and from those to the highest, never reversing that order, and consequently leaving no room for the discovery of new principles by way of deduction at all. It is not to be conceived that a man of Bacon's sagacity could have fallen into this mistake, if there had existed in his time, among the sciences which treat of successive phenomena, one single deductive science, such as mechanics, astronomy, optics, acoustics, etc. now are. In those sciences, it is evident that the higher and middle principles are by no means derived from the lowest, but the reverse. In some of them, the very highest generalisations were those earliest ascertained with any scientific exactness; as, for example (in mechanics), the laws of motion. Those general laws had not indeed at first the acknowledged universality which they acquired after having been successfully employed to explain many classes of phenomena to which they were not originally seen to be applicable; as when the laws of motion were employed in conjunction with other laws to explain deductively the celestial phenomena. Still the fact remains that the propositions which were afterwards recognised as the most general truths of the science were, of all its accurate generalisations, those earliest arrived at.

‘Bacon's greatest merit therefore cannot consist, as we are so often told that it did, in exploding the vicious method pursued by the ancients, of flying to the highest generalisations first, and deducing the middle principles from them, since this is neither a vicious nor an exploded method, but the

universally accredited method of modern science, and that to which it owes its greatest triumphs. The error of ancient speculation did not consist in making the largest generalisations first, but in making them without the aid or warrant of rigorous inductive methods, and applying them deductively without the needful use of that important part of the deductive method termed verification.*

We cannot entirely concur in the concluding paragraph. Although Bacon did not perhaps see the real importance of the Deductive Method, he did see the futility of the method as it was employed before his time; and he saw moreover that the cause lay in the want of 'verification'—in the want of 'the aid or warrant of rigorous inductive methods:' this we think his greatest merit, as we think his imperfect conception of the Deductive Method his greatest imperfection.

There is also another potent reason why the merely Inductive Method should not have contributed to any great discoveries; and we must borrow from the *System of Logic* the passage wherein this is exhibited:—

'It has excited the surprise of philosophers that the detailed system of inductive Logic has been turned to so little direct use by subsequent inquirers—having neither continued, except in a few of its generalities, to be recognised as a theory, nor having conducted, in practice, to any great scientific results. But this, though not unfrequently remarked, has scarcely received any plausible explanation; and some indeed have preferred to assert that all rules of induction are useless, rather than suppose that Bacon's rules are grounded upon an insufficient analysis of the inductive process. Such however will be seen to be the fact, as soon as it is considered that Bacon entirely overlooked plurality of causes. All his rules tacitly imply the assumption, so contrary to all we know of Nature, that a phenomenon cannot have more than one cause.'†

In another passage, too long for extract, the same author

* MILL: *System of Logic*, ii. 524-6.

† *Ibid.* ii. 373.

points out a capital error in Bacon's view of the inductive philosophy, viz. his supposition that the principle of elimination—that great logical instrument which he had the immense merit of first bringing into use—was applicable in the same sense, and in the same unqualified manner, to the investigation of *co-existences*, as to that of the *successions of phenomena*.*

In conclusion it may be said that, although his Method had not the power which he confidently assigned to it, his eloquence and far-reaching thoughts powerfully affected both his own and succeeding generations. He dignified the scientific attitude; he made men proud of investigations which otherwise they might have disdained; he kept before them the vanity of the Subjective Method, and passionately urged upon them the necessity of patient interrogation of Nature. The splendour of his style gave irresistible power to his ideas. 'Il se saisit tellement de l'imagination,' says M. de Rémusat, 'qu'il force la raison à s'incliner, et il éblouit autant qu'il éclaire.'

* *System of Logic*, ii. 127 et seq.

CHAPTER III.

DESCARTES.

§ I. LIFE OF DESCARTES.

JUST at the close of the sixteenth century, 1596, there was born in Touraine, of Breton parents, a feeble sickly child, named René Descartes Duperron. A few days after his birth, a disease of the lungs carried off his mother. The sickly child grew to be a sickly boy; and, till the age of twenty, his life was despaired of.

That boy was one the world could ill afford to lose. Few who saw him would have supposed that the boy, whose short dry cough and paleness seemed to announce an early grave, was shortly to become one of the leaders of men, whose works would continue, through centuries, to be studied, quoted, and criticised. His masters loved him. He was a pupil of promise; and in his eighth year had gained the title of the Young Philosopher, from his avidity to learn, and his constant questioning.

His education was confided to the Jesuits. This astonishing body has many evils laid to its door, but no one can refuse to it the praise of having been ever ready to see and apply the value of education. In the college of La Flèche the young Descartes was instructed in mathematics, physics, logic, rhetoric, and the ancient languages. He was an apt pupil; learned quickly, and was never tired of learning.

Was the food supplied by the Jesuits nutritious? M. Thomas remarks, 'There is an education for the ordinary

man; for the man of genius there is no education but what he gives himself; the second generally consists in destroying the first.' And so it was with Descartes, who, on leaving La Flèche, declared that he had derived no other benefit from his studies than that of a conviction of his utter ignorance, and a profound contempt for the systems of philosophy in vogue. The incompetence of philosophers to solve the problems they occupied themselves with—the anarchy which reigned in the scientific world, where no two thinkers could agree upon fundamental points—the extravagance of the conclusions to which some accepted premisses led, determined him to seek no more to slake his thirst at their fountains.

'And that is why, as soon as my age permitted me to quit my preceptors,' he says, 'I entirely gave up the study of letters; and resolving to seek no other science than that which I could find in myself, or else in the great book of the world, I employed the remainder of my youth in travel, in seeing courts and camps, in frequenting people of diverse humours and conditions, in collecting various experiences, and above all in endeavouring to draw some profitable reflection from what I saw. For it seemed to me that I should meet with more truth in the reasonings which each man makes in his own affairs, and which, if wrong, would be speedily punished by failure, than in those reasonings which the philosopher makes in his study, upon speculations which produce no effect, and which are of no consequence to him, except perhaps that he will be more vain of them the more remote they are from common sense, because he would then have been forced to employ more ingenuity and subtlety to render them plausible.'*

For many years he led a roving unsettled life; now serving in the army, now making a tour; now studying mathematics in solitude, now conversing with scientific men. One constant purpose gave unity to those various pursuits. He was elat-

* *Discours de la Méthode*, p. 6, ed. JULES SIMON: Paris, 1844.

borating his answers to the questions which perplexed him; he was preparing his Method.

When only three-and-twenty, he conceived the design of a reformation in philosophy. He was at that time residing in his winter quarters at Neuburg, on the Danube. His travels soon afterwards commenced, and at the age of thirty-three he retired into Holland, there in silence and solitude to arrange his thoughts into a consistent whole. He remained there eight years; and so completely did he shut himself from the world that he concealed from his friends the very place of his residence.

When the results of this meditative solitude were given to the world, in the shape of his celebrated *Discourse on Method*, and his *Meditations* (to which he invented replies), the sensation produced was immense. It was evident to all men that an original and powerful thinker had arisen; and although of course this originality could not but rouse much opposition, from the very fact of being original, yet Descartes gained the day. His name became European. His controversies were European quarrels. Charles I. of England invited him over, with the promise of a liberal appointment; and the invitation would probably have been accepted, had not the civil war broken out. He afterwards received a flattering invitation from Christina of Sweden, who had read some of his works with great satisfaction, and wished to learn from himself the principles of his philosophy. He accepted it, and arrived in Stockholm in 1649. His reception was most gratifying, and the Queen was so pleased with him as earnestly to beg him to remain with her, and give his assistance towards the establishment of an academy of sciences. But the delicate frame of Descartes was ill fitted for the severity of the climate, and a cold, caught in one of his morning visits to Christina, produced inflammation of the lungs, which carried him off. Christina wept for him, had him interred in the cemetery for foreigners, and placed a long eulogium upon his tomb. His remains were subsequently (1666) carried from Sweden into France, and buried with great ceremony in Ste. Geneviève du Mont.

Descartes was a great thinker; but having said this, we have almost exhausted the praise we can bestow upon him as a man. In disposition he was timid to servility. When promulgating his proofs of the existence of the Deity, he was in evident alarm lest the Church should see something objectionable in them. He had also written an astronomical treatise; but hearing of the fate of Galileo, he refrained from publishing, and always used some chicane in speaking of the world's movement. He was not a brave man; nor was he an affectionate man. But he was even-tempered, placid, and studious not to give offence.

§ II. THE METHOD OF DESCARTES.

It has already been indicated that the great work performed by Descartes was, like that of Bacon, the promulgation of a new Method. This was rendered necessary by their separation from the ancient philosophy and their exclusion of Authority. If inquiry is to be independent—if Reason is to walk alone, in what direction must she walk? Having relinquished the aid of the Church, there were but two courses open: the one, to tread once more in the path of the ancients, and to endeavour by the ancient Methods to attain the truth; or else to open a new path, to invent a new Method. The former was barely possible. The spirit of the age was deeply imbued with a feeling of opposition against the ancient Methods; and Descartes himself had been painfully perplexed by the universal anarchy and uncertainty which prevailed. The second course was therefore chosen.

Uncertainty was the disease of the epoch. Scepticism was wide-spread, and even the most confident dogmatism could offer no criterion of certitude. This want of a criterion we saw leading, in Greece, to Scepticism, Epicureanism, Stoicism, the New Academy, and finally leading the Alexandrians into the province of faith, to escape from the dilemma. The question of a criterion had long been the

vital question of philosophy. Descartes could get no answer to it from the doctors of his day. Unable to find firm ground in any of the prevalent systems; distracted by doubts; mistrusting the conclusions of his own understanding; mistrusting the evidences of his senses, he determined to make a *tabula rasa*, and reconstruct his knowledge. He resolved to examine the premisses of every conclusion, and to believe nothing but upon the clearest evidence of reason; evidence so convincing that he could not by any effort refuse to assent to it.

He has given us the detailed history of his doubts. He has told us how he found that he could plausibly enough doubt of everything, except of his own existence. He pushed his scepticism to the verge of self-annihilation. There he stopped: there, in Self, in his Consciousness, he found at last an irresistible Fact, an irreversible Certainty.

Firm ground was discovered. He could doubt the existence of the external world, and treat it as a phantasm; he could doubt the existence of God, and treat the belief as a superstition; but of the existence of his thinking, doubting mind no sort of doubt was possible. He, the doubter, existed, if nothing else existed. The existence that was revealed in his own Consciousness was the primary Fact, the first indubitable certainty. Hence his famous *Cogito, ergo Sum*: I think, therefore I am.

It is somewhat curious, and, as an illustration of the frivolous verbal disputes of philosophers, not a little instructive, that this celebrated *Cogito, ergo Sum*, should have been frequently attacked for its logical imperfection. It has been objected, from Gassendi downwards, that to say, 'I think, *therefore* I am,' is a begging of the question, since existence has to be *proved* identical with thought. Certainly, if Descartes had intended to prove his own existence by reasoning, he would have been guilty of the *petitio principii* Gassendi attributes to him; viz. that the major premiss, 'that which thinks exists,' is assumed, not proved. But he did not intend this. What was his object? He has told us

that it was to find a starting-point from which to reason—to find an irreversible certainty. And where did he find this? In his own Consciousness. Doubt as I may, I cannot doubt of my own existence, because my very doubt reveals to me a something which doubts. You may call this an assumption, if you will: I point out the fact as one above and beyond all logic; which logic can neither prove nor disprove; but which must always remain an irreversible certainty, and as such a fitting basis of philosophy.*

I exist. No doubt can darken such a truth; no sophism can confute this clear principle. This is a certainty, if there be none other. This is the basis of all science. It is in vain to ask for a proof of that which is self-evident and irresistible. I exist. The *consciousness* of my existence is to me the assurance of my existence.

Had Descartes done no more than point out this fact, he would have no claim to notice here; and we are surprised to find many writers looking upon this *Cogito, ergo Sum*, as constituting the great idea in his system. Surely it is only a statement of universal experience—an epigrammatic form given to the common-sense view of the matter. Any clown would have told him that the assurance of his existence was his consciousness of it; but the clown would not have stated it so well. He would have said: I know I exist, because I *feel* that I exist.

Descartes therefore made no discovery in pointing out this fact as an irresistible certainty. The part it plays in his system is only that of a starting-point. It makes *Consciousness* the basis of all truth. There is none other possible. Interrogate Consciousness, and its clear replies will be Science. Here we have a new basis and a new philosophy introduced. It was indeed but another shape of the old formula, 'Know thyself,' so differently interpreted by Thales, Socrates, and the Alexandrians: but it gave that formula a precise signification, a thing it had before always wanted.

* See his replies to the third and fifth series of Objections, affixed to his *Meditations*.

Of little use could it be to tell man to know himself. How is he to know himself? By looking inwards? We all do that. By examining the nature of his thoughts? That had been done without success. By examining the *process* of his thoughts? That too had been accomplished, and the logic of Aristotle was the result.

The formula needed a precise interpretation; and that interpretation Descartes gave. Consciousness, said he, is the basis of all knowledge; it is the only ground of absolute certainty. Whatever it distinctly proclaims must be true. The process, then, is simple: examine your Consciousness, and its clear replies. Hence the vital portion of his system lies in this axiom, *all clear ideas are true*: whatever is clearly and distinctly conceived is true. This axiom he calls the foundation of all science, the rule and measure of truth.*

The next step to be taken was to determine the rules for the proper detection of these ideas; and these rules he has laid down as follows:—

I. Never to accept anything as true but what is *evidently* so; to admit nothing but what so clearly and distinctly presents itself as true that there can be no reason to doubt it.

II. To divide every question into as many separate questions as possible; that each part being more easily conceived, the whole may be more intelligible.—(Analysis.)

III. To conduct the examination with order, beginning by that of objects the most simple, and therefore the easiest to be known, and ascending little by little up to knowledge of the most complex.—(Synthesis.)

IV. To make such exact calculations, and such circum-spections, as to be confident that nothing essential has been omitted.

Consciousness being the ground of all certainty, everything of which you are clearly and distinctly conscious must be

* 'Hâc igitur detectâ veritate simul etiam invenit omnium scientiarum fundamentum: ac etiam omnium aliarum veritatum mensuram ac regulam; scilicet, quicquid tam clarè ac distinctè percipitur quàm istud verum est.'—*Princip. Phil.* p. 4.

true; everything which you clearly and distinctly conceive exists, if the idea of it involves existence.

In the four rules, and in this view of Consciousness, we have only half of Descartes' system: the psychological half. It was owing, we believe, to the exclusive consideration of this half that Dugald Stewart was led (in controverting Condorcet's assertion that Descartes had done more than either Galileo or Bacon towards experimental philosophy) to say that Condorcet would have been nearer the truth if he had pointed him out as the Father of the Experimental Philosophy of the Mind. Perhaps the title is just; but Condorcet's praise, though exaggerated, was not without good foundation.

There is, in truth, another half of Descartes' system; equally important, or nearly so: we mean the Deductive Method. His eminence as a mathematician is universally recognised. He was the first to make the grand discovery of the application of Algebra to Geometry; and he made this at the age of twenty-three. The discovery that geometrical curves might be expressed by algebraical numbers, though highly important in the history of mathematics, only interests us here by leading us to trace his philosophical development. He was deeply engrossed in mathematics; he saw that mathematics were capable of a still further simplification, and of a far more extended application. Struck as he was with the certitude of mathematical reasoning, he began applying the principles of mathematical reasoning to the subjects of metaphysics. His great object was, amidst the scepticism and anarchy of his contemporaries, to found a system which should be solid and convincing. He first wished to find a basis of certitude: this he found in Consciousness. He next wished to find a method of certitude: this he found in mathematics.

'Those long chains of reasoning,' he tells us, 'all simple and easy, which geometers use to arrive at their most difficult demonstrations, suggested to me that all things which came within human knowledge must follow each other in a similar

chain; and that provided we abstain from admitting anything as true which is not so, and that we always preserve in them the order necessary to deduce one from the other, there can be none so remote to which we cannot finally attain, nor so obscure but that we may discover them.* The two leading points in his system are Consciousness the only ground of certitude, and mathematics the only method of certitude.

We may say therefore that the Deductive Method was now completely constituted. The whole operation of philosophy henceforth consisted in deducing consequences. The premisses had been found; the conclusions alone were wanting. This was held to be true of physics no less than of psychology. Thus, in his *Principia*, he announces his intention of giving a short account of the principal phenomena of the world, not that he may use them as reasons to prove anything; for he adds, 'we desire to *deduce effects from causes, not causes from effects*: but only in order that out of the innumerable effects which we learn to be capable of resulting from the same causes, we may determine our minds to consider some rather than others.†

Such being the Method of Descartes, our readers will hear with surprise that some French writers have declared it to be the same Method as that laid down by Bacon; and this surprise will be heightened on learning that M. Victor Cousin is one of those writers. He says, 'Let us now see what our Descartes has done. He has established in France the same Method that England has endeavoured to attribute exclusively to Bacon; and he has established it with less grandeur of imagination in style, but with the superior precision which must always characterise one who, not content with laying down rules, puts them himself in prac-

* *Discours de la Méthode*, p. 12.

† *Principia Philos.* pars iii. p. 51. The phrase, 'cupimus enim rationes effectuum à causis, non autem à contrario causarum ab effectibus deducere,' may be said to express the nature of his method, as opposed to the method of Bacon.

tice, and gives the example with the precept.* M. Cousin then quotes the four rules we have already given; and seeing in them Analysis and Synthesis, which he believes solely to constitute the Method of Bacon, declares that the two Methods are one. Such a statement requires no refutation; nor indeed would it have been noticed, did it not afford an illustration of the loose way in which the term Method is employed by many writers.

And here may be resumed and closed the parallel previously commenced between Bacon and Descartes, assigning to each his distinctive position. Both may be said to have instituted the Objective Method, though both in varying degrees failed to complete that attempt by an extension to all matters of inquiry, embracing both man and the world. The aberration is especially noticeable in Descartes, who, having subordinated all cosmical speculations to the Objective Method, having promulgated an hypothesis which was to explain the phenomena of the world on the properties recognised in matter without the intervention of occult qualities, entities, or volitions, and having even extended this principle to the chief physical aspects of the organism, broke suddenly away when he arrived at mental and social problems, and reintroduced the Subjective Method, which indeed he proclaimed (though he was untrue to his announcement) to be *the* Method of all philosophic research. His aberration is all the more striking because he had boldly asserted the automatism of animals. He denied that they had moral and mental faculties: they were, he said, machines. This hypothesis has been variously interpreted. It is too repugnant to common sense to gain general acceptance, and being so repugnant, it has puzzled the ingenuity of critics to explain how Descartes came to adopt it. I am not prepared with a satisfactory explanation, but note that this effort to reduce animal phenomena to a mechanism is only an extension of the effort to reduce cosmical phenomena to a mechanism,

* *Hist. de la Phil.* leçon iii. p. 91, ed. Bruxelles, 1840.

and that the denial of a soul to brutes is a rigorous consequence of the Method employed by him.*

Thus on the one hand his antagonism to the Scholastic Philosophy, aided by his scientific knowledge, led him to the objective point of view in studying Cosmology, while on the other hand his psychological assumptions reintroduced the subjective point of view, and thus not only thwarted the perfect conception of Method but led, as it always leads, to great imperfection in the application of particular methods. A perfect employment of Method includes both the Induction of Bacon and the Deduction of Descartes, with some subsidiary processes which neither of them understood, especially the use of Hypothesis and Experiment. If it was Bacon's error to undervalue Deduction, it was no less the error of Descartes to undervalue Induction, owing to the influence of the Subjective Method, which naturally leads to the mistake of overlooking the essential requisite of Verification. The Subjective Method is always deductive, and its deductions are logically formed on the same process as those of the Objective Method; but there is a philosophical difference between the two: the *data* of the first are not verified inductions, nor are the conclusions verified by confrontation with reality; the *data* and conclusion of the second are rigorously verified.

Although Bacon failed to recognise the importance of

* 'Quels qu'aient été les graves inconvéniens réels de cette singulière théorie automatique, il importe de noter que c'est précisément pour la réfuter que les physiologistes, et surtout les naturalistes du siècle dernier, furent graduellement conduits à détruire directement la vaine séparation fondamentale que Descartes avait ainsi tenté d'établir entre l'étude de l'homme et celle des animaux.'—COMTE: *Cours de Philos. positive*, iii. 763. 'Le fameux partage opéré par Descartes n'a pu avoir d'autre efficacité essentielle que de procurer à la méthode positive la liberté nécessaire à sa formation graduelle, jusqu'à ce que sa constitution fût devenue assez complète pour lui permettre de s'emparer enfin du seul sujet qui lui eût d'abord été interdit.'—*Ibid.* p. 771. It should be added that, however absurd this hypothesis may have seemed, it was speedily reproduced by the majority even of those who made merry with it, nor is it yet finally extinct; for what is the popular notion of animals impelled by Instinct to actions which in man are the results of Reason, but a vague form of the notion that animals are mere machines without intelligent direction?

Deduction yet he did recognise the necessity of the objective point of view, and sought the laws of phenomena in the order of the phenomena themselves. He sought an alliance with scientific research, and did his best to institute its methods. He was fully alive to the illusions of the Subjective Method. Not so Descartes. His basis was subjective. He attempted a systematic arrangement of the external phenomena according to deductions from unverified data. So far from looking out of himself for the explanation of external phenomena, it was his constant aim to discover in the orderly arrangement of ideas a key to the mystery of the world. This, indeed, Leibnitz proclaims as his chief merit.* Although, therefore, Descartes sought alliance with scientific research, his Philosophy was essentially metaphysical; and although he made discoveries in Science, his fame is that of a great metaphysician.

While Bacon urged the necessity of proceeding from effects to causes, Descartes proceeded from causes to effects. Bacon erred as to the *nature* of the causes we should seek, as to the operation of a multiplicity of causes, and as to the methods of search. Descartes erred still more gravely in starting from data that were logical figments or subjective inspirations. Both separated Philosophy from Theology, and thus consummated the long struggle which accompanied the birth-pangs of modern culture: but Bacon, true to the objective point of view, declared the problems of Theology and Ontology to be inaccessible to reason, consequently beyond the province of Philosophy; Descartes, true to the subjective point of view, declared them to be soluble *only* by reason, and made it the primary object of Philosophy to solve them.

It is therefore with justice that modern Science looks up to Bacon as its illustrious herald, and modern Metaphysics sees its ancestry in the schools which issued directly from

* 'On ne peut nier que Descartes n'ait apporté de belles choses; surtout il a le mérite, renouvelant l'entreprise de Platon, de détourner les esprits des considérations sensibles.'—LEIBNITZ: *Sur une Réforme de la Philos. première*.

Descartes. The metaphysical character of the Cartesian philosophy is well expressed by Fontenelle in his parallel between Descartes and Newton: 'Tous deux, géomètres excellents, ont vu la nécessité de transporter la géométrie dans la physique. . . . Mais l'un, prenant un vol hardi, a voulu se placer à la source de tout, se rendre maître des premiers principes par quelques idées claires et fondamentales, pour n'avoir plus qu'à descendre aux phénomènes de la nature comme à des conséquences nécessaires; l'autre, plus timide ou plus modeste, a commencé sa marche par s'appuyer sur les phénomènes pour remonter aux principes inconnus, résolu de les admettre, quels que les pût donner l'enchaînement des conséquences. L'un part de ce qu'il entend nettement pour trouver la cause de ce qu'il voit; l'autre part de ce qu'il voit pour en trouver la cause, scit claire, soit obscure.'

§ III. APPLICATION OF THE METHOD.

The first application of Descartes' Method was not, as some say, to prove his own existence (for that neither admitted of *logical* proof nor of disproof: it was a primary fact); but to prove the existence of God.

Interrogating his Consciousness, he found that he had the idea of God, understanding, by God, a substance infinite, eternal, immutable, independent, omniscient, omnipotent. This, to him, was as certain a truth as the truth of his own existence. I exist: not only do I exist, but exist as a miserably imperfect finite being, subject to change—greatly ignorant, and incapable of creating anything. In this, my Consciousness, I find by my finitude that I am not the All; by my imperfection, that I am not perfect. Yet an infinite and perfect being must exist, because infinity and perfection are implied, as correlatives, in my *ideas* of imperfection and finitude. God therefore exists: his existence is clearly proclaimed in my Consciousness, and can no more be a matter of doubt, when fairly considered, than my own

existence. The conception of an infinite being proves his real existence ; for if there is not really such a being, *I* must have made the conception ; but if I could make it, I can also unmake it, which evidently is not true ; therefore there must be, externally to myself, an archetype from which the conception was derived.

‘The ambiguity in this case,’ it has been remarked,* ‘is the pronoun *I*, by which in one place is to be understood my *will*, in another *the laws of my nature*. If the conception, existing as it does in my mind, had no original without, the conclusion would unquestionably follow that *I* had made it—that is, the laws of my nature must have spontaneously evolved it ; but that my *will* made it would not follow. Now, when Descartes afterwards adds that I cannot unmake the conception, he means that I cannot get rid of it by an act of my will, which is true, but is not the proposition required. That what some of the laws of my nature have produced, other laws, or the same laws in other circumstances, might not subsequently efface, he would have found it difficult to establish.’

His second demonstration is the weakest of the three. Indeed, it is the only one not irrefragable, upon his principles. The third demonstration is peculiarly Cartesian, and may be thrown into this syllogism :—

All that we clearly and distinctly conceive as contained in anything is true of that thing.

Now we conceive, clearly and distinctly, that the existence of God is contained in the idea we have of him.

Ergo,

God exists.

Having demonstrated the existence of God, he had to prove the distinction between body and soul. This, to him, was easy. The fundamental attribute of Substance must be Extension, because we can abstract from Substance all the qualities except Extension. The fundamental attribute of

* MILL : *System of Logic*, ii. 447.

Mind is Thought, because by this attribute Mind is revealed to itself. Now, according to one of his logical axioms, two substances are really distinct when their ideas are complete, and in no way imply each other. The ideas, therefore, of extension and thought being distinct, it follows that Substance and Mind are distinct in essence.

We need not pursue our analysis of his metaphysical notions further. We only stop to remark on the *nature* of his demonstrations of God and the soul. It is, and was, usual to prove the existence of God from what is called the ‘evidence of design.’ Descartes neither started from design nor from motion, which must have a mover: he started from the *à priori* ideas of perfection and infinity; his proof was in the clearness of his idea of God. His method was that of definition and deduction. To define the idea of God, and hence to construct the world—not to contemplate the world, and thence infer the existence of God—was the route he pursued. Is it not eminently the procedure of a mathematician? and of a mathematician who has taken Consciousness as his starting-point?

Descartes’ speculations are beautiful exemplifications of his Method; and he follows that Method, even when it leads him to the wildest conclusions. His physical speculations are sometimes admirable (he made important discoveries in optics), but mostly fanciful. The famous theory of vortices deserves a mention here, as an example of his Method.

He begins by banishing the notion of a *vacuum*, not, as his contemporaries said, because Nature has a horror of vacuum, but because, the essence of Substance being Extension, wherever there is Extension there is Substance, consequently empty space is a chimera. The substance which fills all space must be assumed as divided into equal angular parts. Why must this be assumed?—Because it is the most simple, therefore the most natural, supposition. This substance being set in motion, the parts are ground into a spherical form; and the corners thus rubbed off, like filings or sawdust, form a second and more subtle kind of substance. There is,

besides, a kind of substance, coarser and less fitted for motion. The first kind makes luminous bodies, such as the sun and fixed stars; the second makes the transparent substance of the skies; the third kind is the material of opaque bodies, such as earth, planets, etc. We may also assume that the motions of these parts take the form of revolving circular currents, or *vortices*. By this means the matter will be collected to the centre of each vortex, while the second or subtle matter surrounds it, and by its centrifugal effort constitutes light. The planets are carried round the sun by the motion of this vortex, each planet being at such a distance from the sun as to be in a part of the vortex suitable to its solidity and mobility. The motions are prevented from being exactly circular and regular by various causes. For instance, a vortex may be pressed into an oval shape by contiguous vortices.*

Descartes, in his *Physics*, adopted a method which permitted him to set aside the *qualities* and the *substantial forms* (which others were seeking), and to consider only the relations of number, figure, and motion. In a word, he saw in *Physics* only mathematical problems. This was premature. Science, in its infancy, cannot be carried on by the Deductive Method alone: such a process is reserved for its maturity. The reason is that the deduction is only valid when it is employed on the Objective Method.

But Deduction is a potent instrument, and Bacon's greatest error was in not sufficiently acknowledging it. Hence we may partly account for the curious fact that Bacon, with his Induction, made no discoveries, while Descartes, with his Deduction, made important discoveries. Of course the greater physical knowledge of Descartes, and the greater attention bestowed by him upon physics, had much to do with this, by giving him an objective basis: but his Method also assisted him, precisely because his discoveries were of

* We have followed Dr. WHEWELL's exposition of this theory, as given by him, *Hist. of Ind. Sciences*, ii. p. 134. The reader will do well, however, to turn also to DESCARTES' own exposition in the *Principia Philosophiæ*, where it is illustrated by diagrams.

a kind to which the mathematical reasoning was strictly applicable.

That Descartes had read Bacon there is no doubt. He has himself praised Bacon's works as leaving nothing to be desired on the subject of *experience*; but he perceived Bacon's deficiency, and declared that we are 'liable to collect many *superfluous* experiences of particulars, and not only superfluous but false,' if we have not ascertained the truth *before* we make these experiences. In other words, experiment should be the verification of an *à priori* conception; whereas Bacon teaches us to form our conceptions from experiment.

We have said enough to make the Method of Descartes appreciable. His position is that of founder of the Deductive Method on the basis of Consciousness. His scholars may be divided into the mathematical cultivators of Physics and the deductive cultivators of Philosophy. By the first he was speedily surpassed, and his influence on them can only be regarded as an impulsion. By the second he was *continued*: his principles were unhesitatingly accepted, and only developed in a somewhat different manner.

His philosophical Method subsists in the present day. It is the Method implicitly or explicitly adopted by most metaphysicians in their speculations upon ontological subjects. Is it a good Method? The question is of the highest importance: we will endeavour to answer it.

§ IV. IS THE METHOD TRUE?

In the Dedicatory Epistle prefixed to his *Meditations*, Descartes declares that his demonstrations of the existence of God, etc. 'equal, or even surpass, in certitude the demonstrations of geometry.' Upon what does he found this belief? He founds it upon the very nature of certitude. Consciousness is the basis of all certitude. Whatever I am distinctly conscious of, I must be certain of; all the ideas which I find in my Consciousness, as distinctly conceived, must be true. The belief I have in my existence is derived

from the fact of my Consciousness: I *think*, therefore I *exist*. Now as soon as I conceive a truth with distinctness, I am irresistibly led to believe in it; and if that belief is so firm that I can never have any reason to doubt that which I believe, I have all the certitude that can be desired.

Further: we have *no knowledge whatever of anything external to us except through the medium of ideas*. The consequence is, says Descartes, that *whatever we find in the ideas must necessarily be in the external things*.

It is only in our minds that we can seek whether things exist, or not. There cannot be more reality in an effect than in a cause. The external thing, being the cause of the idea, must therefore possess as much reality as the idea, and *vice versa*. So that whatever we conceive as existent exists.

This is the basis on which Descartes' system is erected; if this basis be rotten, the superstructure must fall. If the root is vitiated, the tree will bear no fruit. No thinker, except Spinoza, has so clearly, so frankly, stated his criterion.

And the criterion is fallacious. The very Consciousness to which he appeals convicts him. There is this fallacy in his system: Consciousness is the ultimate ground of certitude, *for me*; if I am conscious that I exist, I cannot doubt that I exist; if I am conscious of pain, I must be in pain. This is self-evident. But what ground of certitude can my Consciousness afford respecting things which are *not me*? How does the principle of certitude apply? How far does it extend? It can only extend to things which relate to me. I am conscious of all that passes within myself; but I am not conscious of what passes in not-self: all that I can possibly know of the not-self is in its effects upon me.

Consciousness is therefore 'cabin'd, cribb'd, confined' to *me*, and to what passes within *me*; so far does the principle of certitude extend, and no farther. Any other ideas we may have, any knowledge we may have respecting *not-self*, can only be founded on inferences. Thus, I burn myself in the fire: I am conscious of the sensation; I have certain and immediate knowledge of that. But I can only be certain

that a change has taken place in my consciousness; when from that change I infer the existence of an external object (the fire), my inference *may* be correct, but I have obviously shifted my ground; Consciousness—my principle of certitude—forsakes me here: I go out of myself to infer the existence of something which is not-self. My knowledge of the sensation was *immediate*, indubitable. My knowledge of the object is *mediate*, uncertain.

Directly, therefore, we leave the ground of Consciousness for that of inference, avenues of doubt are opened. Other inferences can be brought to bear upon any one inference to illustrate or to refute it. The mathematical certainty which Descartes attributed to these inferences becomes a great uncertainty. He says we only know things through the medium of ideas. We accept the proposition as unquestionable. But then he also says that, in consequence of this, whatever we find in the ideas must necessarily be true of the things. The reason is, that as ideas are caused in us by objects, and as every effect must have as much reality as the cause—the effect being *equal* to the cause—so must ideas have the same reality as things. But this is a double fallacy. In the first place, an effect is not *equal* to its cause; it is a mere consequent of an antecedent, having no such relation as *equality* whatever. In the second place, the use of the term ‘reality’ is ambiguous. Unquestionably an effect really exists; but reality of existence does not imply similarity of modes of existence. The burn occasioned by a fire is as *real* as the fire; but it in no way *resembles* the fire.

So when Descartes says that what is true of ideas must be true of things, he assumes that the mind is a passive recipient—a mirror, in which things reflect themselves. This is altogether fallacious; the mind is an *active* co-operator in all perception—perception is a consciousness of changes operated in ourselves, not a consciousness of the objects causing those changes. In truth, so far from our being able to apprehend the nature of things external to us, there is an impenetrable screen for ever placed before our eyes, and that impenetrable

screen is the very Consciousness upon which Descartes relies. When placed in contact with external objects, they operate upon us; their operations we know, themselves we cannot know; precisely because our knowledge of them is *mediate*, and the medium is our Consciousness. Into whatever regions we wander, we carry with us this Consciousness, by means of which, indeed, we know, but all we know is—*ourselves*.

Knowledge is composed of Ideas. Ideas are the joint product of mind on the one hand and of external causes on the other; or rather we may say that Ideas are the internal movements excited by external causes. Upon what principles of inference (since we are here on the ground of inference) can you infer that the ideas excited are *copies* of the exciting causes—that the ideas excited apprehend the whole nature of the causes? The cause of the fallacy is in that very strong disposition to give objectivity to a law of the mind; in consequence of which we often hear people declare that something they are asserting is ‘involved in the idea.’

An exposition of the fallacy which misled Descartes is given by Mr. Mansel in the following admirable passage: ‘*Clearness and distinctness* were proposed by Descartes as criteria of the truth of ideas; but that philosopher has nowhere accurately distinguished between thought properly so called and other states of consciousness, nor between the *formal* clearness and distinctness which depend on the relation of one thought to another and the *material* clearness and distinctness which depend on the relation of a thought to its object as presented. A concept is formally clear when it can be distinguished as a whole from any other; it is formally distinct when its several constituent elements can be analysed and distinguished from each other; but this is a criterion of logical reality alone, of the mental conceivability, not of the extra-mental existence of the object. If I have a clear and distinct notion of gold and of a mountain, I have also a clear and distinct notion of a golden mountain, though the objects of the two first notions are real, and of the last imaginary. On the other hand, a concept will be materially

clear and distinct if it accurately expresses the character of the object itself, and its component elements as they actually exist in nature. These qualities can obviously exist only in those notions which represent real objects; and in this case the clearness and distinctness can only be ascertained by an exact comparison of the object with its notion, *i.e.* by experience.*

It is true that Descartes was more or less aware of the equivocal nature of his canon, since he adds to the requisite of clearness the proviso that the idea shall involve existence, which would be tantamount to Mr. Mansel's phrase 'material clearness.' But he gives no test whereby this material clearness may be ascertained; and in his speculations the material element is frequently disregarded. The experience, which he may be supposed to have silently understood in reference to some objects, could not have been implied in others. How can experience verify the material clearness of our formal idea of God? of the soul? of cause?

There is, indeed, but one mode of escape for Descartes, and all those who believe in the validity of ontological speculations: namely, to assert the existence of Innate Ideas, or—as the theory is generally stated in modern times—of Necessary Truths independent of all experience. If the idea of God, for example, be innate in us, it is no longer a matter of inference, but of Consciousness; and on such an hypothesis Descartes is correct in believing that the certainty of this idea equals the certainty of geometry.

But some maintain that he did not assert the existence of Innate Ideas, though, from its having been a doctrine maintained by his followers, it is usually attributed to him. Dugald Stewart quotes the following passage from Descartes in reply to his adversaries, who accused him of holding the tenet of Innate Ideas:—'When I said that the idea of God is innate in us, I never meant more than this, that *Nature has endowed us with a faculty by which we may know God*; but I have never either said or thought that such ideas had

* MANSSEL: *The Limits of Demonstrative Science*, 1853, p. 10.

an actual existence, or even that they were a *species* distinct from the faculty of thinking. . . . Although the idea of God is so imprinted on our minds that every person has within himself the faculty of knowing Him, it does not follow that there may not have been various individuals who have passed through life without making this idea a distinct object of apprehension; and, in truth, they who think they have an idea of a plurality of Gods have no idea of God whatever.'

From this it would appear that he did not hold the doctrine of Innate Ideas. But we must venture to dissent from the conclusion drawn by Dugald Stewart on the strength of such a passage; against that passage we will bring another equally explicit (we could bring fifty, if necessary), which asserts the existence of Innate Ideas. 'By the word *idea*,' he says, 'I understand all that can be in our thoughts; and I distinguish three sorts of ideas:—*adventitious*, like the common idea of the sun; *framed* by the mind, such as that which astronomical reasoning gives of the sun; and *innate*, as the idea of God, mind, body, a triangle, and generally *all those which represent true immutable and eternal essences*.'* This last explanation is distinct; and it is all that the serious antagonists of Innate Ideas have ever combated. If Descartes, when pressed by objections, gave different explanations, we may attribute that to the want of a steady conception of the vital importance of Innate Ideas in his system. The fact remains that Innate Ideas form the necessary groundwork of the Cartesian doctrine.

Although the theory of Innate Ideas may, in its Cartesian form, be said to be exploded, it does really continue to be upheld, under a new form. A conviction of the paramount necessity of some such groundwork for metaphysical speculation has led to the modern theory of *Necessary Truths*. This plausible theory has been adopted by Dr. Whewell in his *Philosophy of the Inductive Sciences*; but his arguments have

* *Lettres de Descartes*, liv.

been completely answered by Mr. Mill on the one hand, and by Sir John Herschel on the other.*

The basis of all modern ontological speculations lies in the assumption that we have *ideas independent of experience*. That we have no ideas independent of experience has been clearly enough established in the best schools of psychology; but the existence of metaphysical speculation proves that the contrary opinion still finds numerous upholders.

The fundamental question then of modern Philosophy being, Have we any Ideas independent of Experience? the attempts to solve it will occupy the greater portion of our history. Before entering upon it, we must exhibit the Method of Descartes pushed to its ultimate conclusions in Spinoza.†

* *System of Logic*, book ii. ch. v.; and *Quarterly Review*, June 1841; indeed, Dr. WHEWELL's arguments had been anticipated and refuted by LOCKE long before. See *Essay*, book iv. ch. 6, 7.

† The best modern works on Descartes, apart from regular Histories of Philosophy, are FRANCISQUE BOULLIER: *Histoire et Critique de la Révolution Cartésienne*, Paris, 1842; CH. RENOUVIER: *Manuel de la Philos. Moderne*, Paris, 1841; FEUERBACH: *Geschichte der neuern Philosophie*, Leipzig, 1847, and KUNO FISCHER: *Gesch. der neuern Philos.* Bd. i. Heidelberg, 1865. The best edition of Descartes' works is that by VICTOR COUSIN, in eleven vols. 8vo. Paris, 1826. M. JULES SIMON has also published a cheap and convenient edition, in one volume, of the *Discourse on Method*, the *Meditations*, and the *Treatise on the Passions*, Paris, 1844. Both of these have been translated into English (Edinburgh, 1853).

SECOND EPOCH.

*The Subjective Method carried to its extreme results in
Pantheistic Idealism.*

CHAPTER I.

SPINOZA.

§ I. HIS LIFE.

GREAT among the greatest as a thinker, Spinoza is also one of the most interesting figures in the history of Philosophy—a standing lesson of the injustice of mankind to those who are honest in their opinions when the opinions happen to be unpopular. All men declare it ignoble to pretend to believe that which the mind rejects as false ; yet all men are ready to make the rejection of their opinions a crime. You ought not to be a hypocrite ; but you ought not to disbelieve what we assure you is the truth. Be honest by all means ; only don't think differently from us. If you do, we must suspect your morals. It has always been known that Spinoza was as gentle in his life as he was steadfast in his philosophy ; that he lived modest, virtuous, and independent, without blame among men, except for his incorrigible distrust in the wisdom of his elders. It has been known that if he had been an orthodox Jew, or an orthodox Christian, his career would have been held up as a model, and his character canonised ; but this knowledge for several generations did not arrest almost universal execration, did not prevent his name becoming a brand of infamy ; so that the accusation of Spi-

nozism was another name for atheism, and deliberate yielding of the soul to Satan.

But the temper of opinion has changed. The detested atheist is now commonly spoken of as if he were a saint; the 'devil's ambassador' is listened to as if he were a prophet. Men vie with each other in exaggeration of his merits. It is now acknowledged that he was good, wise, gentle, generous; and only polemical intolerance, or the uneasy vanity which seeks display in paradox, will now deny him these qualities. We owe the change to Lessing and Mendelssohn, whose sincerity and penetration at once discerned in the execrated writings a massive grandeur and a lucid depth, and in the man a moral elevation and serenity, which claimed all honour. Herder, Goethe, Novalis, Schleiermacher, Schelling, Hegel—each had his emphatic protest to utter against the vulgar outcry. France followed: and it would now be deemed as great a mark of ignorance to speak with reprobation of Spinoza as to shudder at the heresy of Galileo. The man whom the pious Malebranche could designate 'a wretch' (*un misérable*), the pious Schleiermacher invoked as a saint;* the man whom the sceptic Bayle called a 'systematic atheist,' the Catholic Novalis named 'a God-intoxicated man.' And yet, although the temper has changed, we may doubt whether Spinoza will not continue to be misunderstood by the majority: 'Les âmes mâles,' says Rousseau, 'ont un idionne dont les âmes faibles n'ont pas la granmaire.'

Let us, from the story of his life and the study of his teaching, try to form some opinion of the justice of the hatred he inspired, and of the veneration now felt for him. When scorn for what is base and false is not imperatively commanded by the evidence, admiration becomes a duty. Admiration, provided it be sincere, and not a spurious noisy enthusiasm, partly echo, partly sham, is so noble a feeling, so healthy in its influence on the mind whose guest it

* MALEBRANCHE: *Méditations Chrétiennes*, ix. 13. SCHLEIERMACHER: *Ride über die Religion*, p. 47.

becomes, that even for our own sakes we ought to give it hospitality, while on the highest grounds of justice it carries its own credentials. Blind admiration, indeed, is of no benefit; neither is blind scorn. Spinoza needs but to be known to be admired. Hence it was that his affectionate biographer, Jean Colerus, pastor at the Hague, though trembling with a vague horror at the consequences of what Spinoza taught, was so fascinated by the beauty of the life, that he devoted himself to the collection of materials which should be a lasting monument to the goodness and purity of the heretic. Nothing is more certain than that the life was one of blameless purity. Had there been any rumours to the contrary, the hatred of offended Jews and Christians would have surely preserved and magnified them. This negative evidence is stronger even than the positive details. To be famous, to be infamous, and yet give Scandal no morsel for malignant curiosity, is the rare lot of only the rarest natures.

Baruch Despinosa, or Benedictus de Spinoza,* was born on the 24th November, 1632, in a house on a Burgwal of Amsterdam, behind the Synagogue.† His parents were descendants of Portuguese Jews who had sought refuge in Holland from the merciless Inquisition. His father was an honourable but not wealthy merchant. There were two daughters and one son. This is pretty much all we know of the family. Of Benedict himself as a child we know nothing. Early banished from the home and hearts of his relatives, there were none of those pleasant little traditions concerning the boy which are handed about with pride when the man becomes illustrious.

* In the Royal Library at Hanover there is a letter from SPINOZA to LEIBNITZ in which he signs himself B. Despinosa. But when he published his Abridgment of Descartes, he wrote his name Spinoza; and this is the spelling adopted in the Excommunication. Such minor variations were little thought of in early days, and even at the present day in France we sometimes see a similar indifference.

† I tried in vain to discover the house. The Dutch, who have suffered the house where the orthodox ERASMUS was born, to become a low gin-shop, are not the people to have been very curious about the birthplace of the heterodox SPINOZA.

The first authentic glimpse we get of him is that he was destined for a theological career. His rabbinical education gave him such opportunities for the display of precocious power that he soon attracted the attention of the great Talmudist, Saul Levi Morteira, who felt in him the interest a teacher feels in a promising pupil. Unhappily for teachers, promising pupils often become troublesome : the very ardour of study and vigour of intellect which carry them beyond their schoolfellows carry them also, and with increased momentum, past those boundaries which Authority has fixed. Thus eagerness becomes dangerous, earnestness heresy, and the hopeful pupil passes into the condition of a hopeless outcast. Young Benedict asked such intelligent questions, listened so appreciatingly to the replies, showed so nimble an understanding, and so much eagerness for light, that we can sympathise with Morteira's bewilderment, half dread, half pride, when the pupil hurried on with logical impetuosity, asking questions inconvenient to answer, and pointing out slight discrepancies in the answers. He was indeed a promising pupil ; but of a promise that looked threatening. At fourteen he was a match for a rabbi in the extent and accuracy of biblical learning. At fifteen he puzzled the Synagogue with questions to which satisfactory answers were not forthcoming. Morteira, alarmed, endeavoured to check this inquiring spirit. The attempt was futile. How long the period of disquiet lasted is unknown. Spinoza had made enemies by his freedom ; and since he would not hold his tongue, he had to listen to threats mingled with sophistications. Naturally, heterodoxy grew with discussion. At last he felt that he could no longer remain a member of the Synagogue. We can easily imagine the wrath excited by his withdrawal, not only among the rabbis, but among the members of his family circle. We can picture the storming father, weeping and reproachful mother, indignant sisters, one after another and all together, threatening, sneering, expostulating, urging irrelevant arguments : Why should he not believe what his forefathers had believed ? What vanity

in him to pretend to a wisdom greater than that of the wisest rabbis! What would become of him? What could be his chance of success in life? And the feelings of his family—were they to be disregarded? It was dreadful to think of; wicked, selfish; certain to come to no good.

The arguments of Morteira having failed, we need not ask what chance there was in the 'wild and whirling words' of a family (with its 'feelings' unaccountably disregarded) making any change in his position. Threats were tried and failed. Then a bribe was tried: the suasive influence of money would surely succeed where logic failed? A pension was proposed to him of one thousand florins annually, on the condition of his appearing from time to time in the synagogue, and keeping within his own bosom certain troublesome doubts. The 'bad example' and the 'scandal' would thus be avoided. Nothing was asked of him more than is asked by all Churches, when they are not strong enough to punish, and are weak enough to wish for homage where there is no belief. 'If you are not with us do at least pretend to be with us; give us your countenance, if not your heart.' To some sensitive consciences this is an appalling request. It is like an echo of the tempter's voice. Spinoza had one of these sensitive consciences. He not only would not pretend to believe what he did not believe; he was hurt at the supposition that he could be bribed into hypocrisy.

We can understand how the rage of the rabbis was intensified by this refusal, without, however, believing that they instigated the attempt at assassination which followed. I, for my part, distinctly refuse to believe that. I have never seen any evidence of Jews being morally inferior to Christians; and although fanatics of all sects have shown themselves remarkably indifferent to shedding the blood of opponents, they need, for the sake of their consciences, some form to legalise or legitimise the murder they decree. They cannot look into each other's faces, and propose what each knows will be a murder.

Même aux yeux de l'injuste un injuste est horrible.*

* BOILEAU.

The action of public bodies must be public, and must be protected by at least the forms of legality or the sophisms of 'a higher law.'* On these general grounds, therefore, I acquit the rabbis of having instigated the attempt. Far more probable is the supposition that some fanatic, hearing of the scandal about to fall upon his church, conceived that he would do the church a service if he arrested the scandal with his knife.

Be that as it may, one evening, on returning from the theatre (according to one account), or from the synagogue (according to another), or, as Mr. Froude suggests, probably coming to his home, which was behind the synagogue, a man rushed on him, and struck at him with a knife. The blow, slanting downwards, only tore his coat and grazed his skin. The fanatic escaped. The torn coat was preserved by Spinoza as a memento of religious amenity.

Shortly after this exhibition of individual fanaticism there was another and more imposing exhibition of corporate indignation in the solemn process of Excommunication. There was a large and agitated crowd in the synagogue when the tabernacle wherein were deposited the Books of the Law was opened; and the light of numerous candles of black wax streamed upon the long beards and beaded eyes of the angry faithful. Morteira, formerly the proud teacher, now the irritated priest, ordered sentence of execution to be passed. The chanter rose and chanted forth in loud lugubrious accents the words of execration and of banishment. The words ran thus:—

'According to what has been decreed in the Council of Angels, and definitely determined in the Assembly of Saints, we reject, and banish, and declare him to be cursed and excommunicated, agreeable to the will of God and the Congregation, by virtue of the Book of the Law, and of the six

* SPINOZA has expressed this in the following passage: 'Ita enim hominum naturam constitutam videmus, ut unusquisque (sive rex sive subditus sit) si quid turpe commisit factum suum talibus circumstantiis adornare studeat ut nihil contra justum et decorum commisisse credatur.'—*Tractatus Theolog.-Politicus*, c. xii.

hundred and thirteen Precepts contained therein. We pronounce the same interdiction used by Joshua with respect to the city of Jericho; the same curse wherewith Elisha cursed those wanton and insolent children, as well as his servant Gehasi; the same Anathema used by Barak with respect to Meros: the same Excommunication used anciently by the members of the Great Council; and which Jehuda, the son of Ezekiel, did likewise thunder against his servant, and with all the curses, anathemas, interdictions, and excommunications which have been fulminated from the time of Moses, our master, to this present day, in the name of *Achthariel*, who is also called *Jah*, the Lord of Hosts; in the name of the great prince *Michael*; in the name of *Metateron*, whose name is like that of his master;* in the name of *Sandalphon*, whose ordinary employment consists in presenting flowers and garlands to his master [that is, in offering the prayers of the children of Israel before the throne of God]. Lastly, in that name which contains forty-two letters—namely, in the name of Him who appeared to Moses in the bush; in that name by which Moses opened and divided the waters of the Red Sea; in the name of Him who said, *I am that I am and who shall be*; by the mysterious depths of the great Name; by His Holy Commandments engraved upon the two Tables of the Law. Lastly, in the name of the Lord of Hosts the Tetragrammaton, the God of Israel who sits enthroned upon the cherubim. In the name of the Globes, Wheels, mysterious Beasts, and his ministering Angels. In the name of all the Holy Angels who minister before the Most High. Every son of Israel or daughter of Israel who shall trespass one of the ordinances denounced solemnly. Let him be cursed by the Lord God of Hosts, who sits above the cherubim, whose holy and dreadful name was pronounced by the high-priest in the great day of atonement. Let him be cursed in heaven and earth by the very mouth of the Almighty God. Let him be cursed in the name of the

* The letters of the word *Metateron* make up the same number with the word *Schadai*, the Almighty, namely, three hundred and fourteen.

great Prince Michael, in the name of Metateron, whose name is like that of his Master. Let him be cursed in the name of *Achthariel Jah*, the Lord of Hosts, cursed by the mouth of the Seraphim and Ofanim and those ministering angels who minister in the presence of God to serve him in all purity and holiness.

‘Was he born in *Nisan* (March), a month the direction of which is assigned to *Uriel*, and to the angels of his company, let him be cursed by the mouth of *Uriel*, and by the mouth of the angels whereof he is the head.

‘Was he born in *Ijar* (April), a month the direction of which is assigned to *Zephaniel*, and to the angels of his company, let him be cursed by the mouth of *Zephaniel*, and by the mouth of the angels whereof he is the head.

‘Was he born in *Sivan* (May), a month the direction of which belongs to *Amriel*, let him be cursed, &c.

‘Was he born in *Thammus* (June), the direction of which is assigned to *Peniel*, let him be cursed, &c.

‘Was he born in *Ab* (July), the direction of which is assigned to *Barkiel*, let him be cursed, &c.

‘Was he born in *Elul* (August) the direction of which is assigned to *Perial*, let him be cursed, &c.

‘Was he born in *Tishri* (September), the direction of which is assigned to *Zuriel*, let him be cursed, &c.

‘Was he born in *Marcheschvan* (October), the direction of which is assigned to *Zachariel*, let him be cursed, &c.

‘Was he born in *Kishlev* (November), the direction of which is assigned to *Adoniel*, let him be cursed, &c.

‘Was he born in *Tefet* (December), the direction of which is assigned to *Anael*, let him be cursed, &c.

‘Was he born in *Schevat* (January), the direction of which is assigned to *Gabriel*, let him be cursed, &c.

‘Was he born in *Adar* (February), the direction of which is assigned to *Rumiel*, and to those of his company, let him be cursed by the mouth of *Rumiel*, and by the mouth of the angels of whom he is the head.

‘Let him be cursed by the mouth of the Seven Angels

who preside over the seven days of the week, and by the mouth of all the angels who follow them and fight under their banners. Let him be cursed by the Four Angels who preside over the four seasons of the year, and by the mouth of all the angels who follow them and fight under their banners. Let him be cursed by the mouth of the seven principalities. Let him be cursed by the mouth of the princes of the Law, whose name is Crown and Seal. Let him be cursed by the mouth of the strong, powerful, and dreadful God.

‘We beseech the great God to confound such a man and to hasten the day of his destruction. O God, the God of Spirits, depress him under all flesh, extirpate, destroy, exterminate, and annihilate him. The ire of the Lord, the most contagious storms and winds fall upon the head of impious men; the exterminating angels will fall upon them. Cursed be he wherever he turn; his soul shall go out from him in terror. His death be in dire sickness; his spirit shall not pass out and away; God send the sharpest and most violent evils upon him. Let him perish by a burning fever, by a consumption, being dried up by fire within and covered with leprosy and imposthumes without. Let God pursue him till he be entirely rooted out and destroyed; until his own sword shall be pierced through his own breast; and his bow shall be broken. He will be like the straw which is scattered about by the wind. The angel of the Lord will pursue him in darkness, in slippery places, where the paths of the wicked are. His destruction will fall upon him at the time when he does not expect it; he will find himself taken in the snare which he laid in private for others. Being driven from the face of the earth, he will be driven from light into darkness. Oppression and anguish will seize him on every side. His eyes shall see his condemnation. He will drink the cup of the indignation of the Almighty God, whose curses will cover him as his garments. The strength of his skin shall be devoured. The earth will swallow him up. God will extirpate and shut him for ever out of his house. Let God never forgive him his sins. Let the wrath and indignation of

the Lord surround him and smoke for ever on his head. Let all the curses contained in the Book of the Law fall upon him. Let God blot him from under the heavens. Let God separate him to his own destruction from all the tribes of Israel, and give him for his lot all the curses contained in the Book of the Law.

‘As for you who are still living, serve the Lord your God, who blessed Abraham, Isaac, Jacob, Moses, Aaron, David, Solomon, the prophets of Israel, and so many good men everywhere dispersed among the Gentiles. May it please the Great God to shower his blessings upon this whole assembly, and upon all other holy assemblies, and the members thereof, except those that trespass over this Anathema. God keep them under his holy protection. God preserve them in his great mercy, and deliver them from all sorts of misery and oppression. God grant them all a great many years; let him bless and prosper all their undertakings. Lastly, may the great God shortly grant them that Deliverance which they with all the brethren of Israel expect: and be this His gracious Will. *Amen.*’*

While these curses were chanted forth from one side, the thrilling sounds of a trumpet accompanied them at intervals from the other. The black candles were reversed, and made to melt drop by drop into a huge tub filled with blood. This symbol made the spectators shudder, and when the close came, and the lights were all suddenly immersed in the

* The formula of excommunication, contained in a Ritual called ‘Kol Bo’ (reprinted in UGOLINI, tom. xxvii.), but probably never used in full, I have found nowhere in English but in the little work called *An Account of the Life and Writings of Spinoza*, published in London, 1720, which none of the later writers seem to have known. It contains an abbreviation of the Life by COLERUS, and a slight analysis of the *Tractatus Theologico-Politicus*. It has only ninety-six pages of large print, and was published for one shilling. The translation is loose in many places, and the Hebrew names incorrectly spelled. The version I have printed has been revised for me by the erudite Semitic scholar Mr. E. Deutsch. The form of excommunication printed by VLOTEN in the *Supplementum* is only an abridgment of that quoted in the text; whether this abridgment was made in the paper sent to Spinoza, or made by the chief Rabbi at the ceremony, is not clear.

blood, a cry of execration rose from all, and in that darkness rose shouts of 'Amen!' to the curses.

Amsterdam, at least the Jewish part of it, was in an uproar; but the young man who had been cursed thus particularly was perhaps not much troubled. Black candles melting in blood, lugubrious chantings of detailed curses with trumpet accompaniments, might terrify those who believed that God would certainly fulfil all the intentions which Rabbis attributed to him—believed in the wrath and ferocity, the merciless lust of vengeance, which they, personifying their own passions, attributed to the Creator: but such cursings were no more than fetid breath to one whose conceptions of the Creator were of a higher kind, whose faith in the goodness of God, and placid resignation to God's will, was more than a tradition, more than a profession, a deep conviction working through his life.

So much of the outward life we know; of the inward life we know nothing. Kuno Fischer is probably warranted in the assumption that it was to the influence of Descartes that Spinoza owed his emancipation from rabbinical ideas; but we have no evidence on the subject. Nor do we know how he fared when banished from the Jewish community and his family. His isolation was great. Excluded from the society of Jews, he found no refuge in that of Christians; nor had he at first a select circle of sympathising friends to whom he could turn: these came later on. There were, indeed, one or two from whom he might have received sympathy: one of these was Vanden Ende, the physician and philologist, from whom he had learned Latin and (it is conjectured) philosophy, and (as I conjecture) gained that acquaintance with anatomy and physiology which, although never obtruded, is nevertheless discernible in his writings.* Vanden Ende had a daughter who is sometimes said to have taught Spinoza

* There are many slight indications scattered through his works, but the best evidence is that he never commits himself by ignorant statements in these matters.

Latin, but as she was only a child of twelve at the date of the Excommunication, 1656, inexorable chronology refuses its countenance to that myth. Whether there is any truth in the story of Spinoza's having been jilted by this Clara Maria for one Kerckrinck, a Hamburg merchant, who wooed and won her with pearl necklaces (a story which has been elevated into romance by Auerbach), it would be difficult to decide. He himself spoke of the affection he had borne her; but considering that she refused to marry Kerckrinck until he had come over to her religion, we cannot suppose that she would have listened to Spinoza, who had discarded all religious forms. And what shall we say to the suggestion of his Jewish biographer, Philippson, that it was this idea of a Jew marrying a Christian which led him to meditate on Judaism, Christianity, and Religion in the abstract, whence he rose through Love to Philosophy?

Love seems to have played but a very subordinate part in this thinker's life. He tells us himself that it was another mistress to whom he was devoted. In a fragment entitled 'On the Improvement of the Intellect,' which was his first work, there is this passage, which has biographical significance:—

'Experience having taught me that all the ordinary affairs of life are vain and futile, and that those things which I dreaded were only in themselves good or bad according as they moved my soul, I finally resolved on inquiring if there was anything truly good in itself, and capable of being communicated to man, a good which, everything else being rejected, could fill the soul entirely; whether, in short, that good existed which, if possessed, could give supreme and eternal happiness. I say, *I finally resolved*, because at first it seemed inconsiderate to renounce the good which was certain for a greater good which was uncertain. I pondered on the advantages which accrued from reputation and wealth, all of which I must renounce if I would seriously undertake the search after another object, and which, if happiness chanced to belong to these advantages, I should necessarily see escape

me; and if, on the other hand, happiness belongs to other objects, and I sought happiness where it is not to be found, then also should I miss it. I therefore resolved this in my mind: whether it were possible for me to regulate my life according to a new rule, or at any rate ascertain the existence of such a rule, without changing the actual order of my life—a thing which I have often in vain attempted. For those things which most frequently occur in life, and in which men, judging from their acts, think supreme happiness consists, may be reduced to three, *riches, honours, and pleasures of the senses*.* By these three the mind is so occupied it is scarcely able to think of any other good. Pleasures of sense, especially, so absorb the mind that it reposes in them, and thus is prevented from thinking of anything else. But after fruition follows sadness, which, if it does not absorb the mind, at least disturbs and deadens it. The search after riches and honours also occupies the mind, especially when sought for their own sake, as if they constituted happiness. Repentance does not follow riches and honours as it follows sensuous pleasures; on the contrary, the more we possess of them the greater is our pleasure, and consequently the greater our desire to increase them. Honour, or reputation, is a serious impediment, because to attain it we must direct our lives according to the wishes of others, avoiding what the vulgar avoid, seeking what men seek. When, therefore, I saw the obstacles which hindered me from following a rule of conduct different from the ordinary rule, and saw how great was the antagonism between the two, I was forced to inquire which of the two would be most useful to me; for, as I said just now, I seemed to be abandoning the certain for the uncertain. But after meditating thereupon, I found, first, that in giving up the ordinary advantages I really renounced only an uncertain good for another equally uncertain, the latter however, being only uncertain as to the possibility of my attaining it. After assiduous meditation I found that I was

* Spinoza's language is stronger, but to translate more literally would, perhaps, mislead; he says: *Divitias, honorem, atque libidinem*.

only quitting certain evils for a certain good. For I saw I was in the greatest danger, which forced me to seek a remedy, even an uncertain one; as a man in sickness, seeing certain death before him unless something be done, will seize at any remedy, however vague, for in that is all his hope. And, indeed, all those things which the vulgar seek were not only unable to furnish me with a remedy, but were obstacles, because they are frequently the very causes of the ruin of those who possess them, and always of those who are possessed by them. Many are the examples of those who have suffered persecution, nay, death, on account of their wealth, or who, in the hope of gain, have exposed themselves to perils, and paid for their folly with their lives. Nor are there fewer examples of men who, in the pursuit of honours, or in defending them, have become most miserable. Lastly, there are innumerable examples of those who by excess of sensual pleasures have accelerated their death. Hence the evil seems to me to arise from this: that all our happiness and unhappiness depends solely on the quality of the object which we desire. For those things which are not desired arouse neither quarrels nor sorrow if they escape us, nor envy when others possess them, neither fear nor hate, in a word, no commotion of the mind; whereas all those evils belong to our attachment to perishable things, such as those just spoken of. But love of what is eternal and infinite nourishes the mind with joy only, and is never touched with sorrow, and it is *this* good so eminently desirable that all men should seek. Yet it was not without meaning that I said, *to consider the matter seriously*. For although I clearly perceived this in my mind, I could not banish all love of wealth, honours, and sensual pleasures. But I found that so long as my mind was occupied with these thoughts so long was it turned away from passions, and seriously meditated the new rule of life, which was to me a great consolation. For thus I saw that these evils were not incurable; and, although at first these serious moments were rare and brief, yet afterwards, as the *true good* became better known, they

became more frequent and more durable, especially when I saw that the acquisition of wealth, glory, and sensual pleasures was fatal so long as these were sought for their own sakes, and not as means to an end. If, indeed, they are sought as means then they have their value and do little hurt; on the contrary, they are very useful towards the proposed end.

‘Here let me say what I mean by the *true good*, and what is the *supreme good*. To understand these rightly, it must be noted that *good* and *evil* are only relative, so that one and the same thing may be called good or evil according to its different aspects; and the same of perfection and imperfection. Nothing considered in itself can be called perfect or imperfect; as we shall understand when we see how all things exist according to the external order and according to the certain laws of nature. But as human weakness cannot follow this eternal order by its own thought, and meanwhile man conceives a human nature much surpassing his own, to the height of which nothing seems to prevent his arriving, he is incited to seek the means of arriving at this perfection, and everything which seems to lead there is called by him the *true good*. But the *supreme good* would be for him and others, if possible, to enjoy this higher nature. And what is this? We shall hereafter show that it is the knowledge of the union of the mind with all nature. This then is the end I must seek: to acquire this higher human nature, and use every effort for others to acquire it also; that is to say, it is necessary for my happiness that many others should think with me, so that their intellects and their desires should accord with mine; for which two things are necessary: *first*, to understand Nature so as to be able to acquire this higher human nature; *next*, to form such a society as will admit of the greatest number arriving easily and securely at such perfection. Therefore our tasks are a *moral philosophy* and the *education of children*; and, as health is a not unimportant means for the end we have in view, the whole science of *medicine* must be added: and, as

the arts make many difficult things easy, and aid us by saving our labour and time, we must not omit *mechanics*. But above all must be sought a method of improving the understanding, and as far as possible to correct it from the beginning, so that, warned against error, it may know clearly.'

This passage must not be read as mere oratorical preamble, but as the serious expression of a conviction. His life testifies to its sincerity. What he said, he did; what he wrote in philosophic treatises, he tried to live in philosophic earnestness. He was very poor, and was often tempted—tempted by money, tempted by vanity, tempted by his senses; but these lures were powerless. It was not with him as it is, unhappily, with so many of us who mean to live a noble life, and wish to act up to our best convictions, but who find that the allurements, which are easily vanquished while they remain at a certain distance, become our masters when they press closely on us. Spinoza was a 'God-intoxicated man' not only in the ardours of speculative activity, but in the conflict of daily life, believing in God as an ever-present reality. Amidst temptation he continued steadfast to the divinity of those aspirations which in solitude his soul had seen to be divine. Many men before and since have been poor and obscure, have despised wealth, have been careless of fame, even when they have shown no touch of vain-gloriousness in their contempt and noisy independence; but not many have been offered the opulence and glory they despised, and have continued, after the offers, to leave them disregarded and untouched. Many men have written eloquently and sincerely of quitting the perishable things of this world for Truth; but few have shown an equal earnestness in translating this eloquence into conduct. Spinoza was one of the few; and it is well that this should be known, because the deep repugnance which is felt against his speculative opinions arises less from a sense of their falsehood than from a belief that such opinions cannot enter the mind without necessarily dissolving all moral principles. I have no hesitation in avowing that many of Spinoza's conclusions

are such as must shock all Christians, and most Theists, that to him even more than to Kant should be applied the epithet of 'all shattering' (*alles zermalmende*), that logically there is but a trivial distinction between his Acosmism, which makes God the one universal being, and Atheism, which makes the cosmos the one universal existence. Observe, I say 'logically' there is but little difference; spiritually, the difference is profound. His Acosmism may denote what is scarcely distinguishable from Atheism; it connotes something utterly opposed to Atheism; and we know that he explicitly and emphatically repudiated Atheism. The horror which many feel at his opinions is entirely due to the rooted prejudice that morality is inseparable from certain special dogmas which, if rejected, leave the man a prey to all animal and ignoble passions. But no one was more rigorous than he in the subjection of all passions and all egoisms to the love of God and obedience to the Divine will. The love of God is everywhere proclaimed the highest good, the noblest aim, the only source of permanent felicity. And when Isaac Orobio accused him of getting rid of all Religion in the escape from superstition, he gravely asked, 'Is it to cast off Religion to acknowledge God as the supreme good, and to love him with singleness of soul, which love must constitute our highest felicity, our most perfect freedom? to believe that the reward of virtue is virtue, and the punishment of ignorance and impotence is ignorance? and that everyone should love his neighbour and obey the laws?''* He denied that true morality has its basis in fear of punishment. To substitute that fear for the love of God, is to show that we love something better than God.

Spinoza shocks those who regard him from an antagonistic standing point. No sooner is the mind disengaged from the trammels of old prejudice than we learn to look on his argu-

* 'An quæso, ille omnem religionem exuit, qui Deum summum bonum agnoscendum statuit, eundemque libero animo ut talem amandum? et quod in hoc solo nostra summa felicitas summaque libertas consistit? porro quod præmium virtutis sit ipsa virtus, stultitiæ autem et impotentiae supplicium sit ipsa stultitia? et denique quod unusquisque proximum suum amare debet et mandatis summæ obedire?'—*Epist.* xlix. p. 294.

ments as on the arguments of Parmenides or Algazel; we ask whether they are true or false, whether they can be taken up into our philosophy, or rejected from it? This is the attitude of Germany. To some extent it is the attitude of France. It will become the attitude of England. For myself I cannot accept Spinoza's system; but I see how it was perfectly compatible with his own pure morality, and do not fear lest it should disturb the morality of anyone who could conscientiously adopt it. We may reject all ontological schemes, and deny the competence of the ontological method; but if we are to employ that method, and put our trust in its conclusions, the results of Spinozism are quite as capable of dovetailing with the needs of a noble life as any other system.

And here I may make a remark of general application, namely, that the incalculable importance of morality so presses itself upon consideration at every turn, and necessarily forms so large a part of every thinker's meditations, that no rational system can be constructed which does not conform itself to the highest prevalent conceptions of the moral law. Hence we may observe, as a rule, that in proportion as a speculative system departs from the principles currently accepted in philosophy, it seeks to gain increased support from morality, thus recovering the hold of men's minds in one direction which it has given up in the other. If this be so, it shows how misguided is the anger which assails a new thought from terror at its moral consequences. Our first question should never be, To what will this lead? but, Is this true?

Spinoza gained his livelihood by glass polishing. The rules of the Jewish doctors enjoin the necessity of learning some mechanical art, as well as the Law. It is not enough for a Rabbi to be a scholar, he must also have at command the means of subsistence. Spinoza, fond of optics, had learned the art of polishing lenses; and he acquired a certain celebrity for the excellence of his workmanship, as we see in

a letter from Leibnitz. He also relaxed his mind occasionally by employing his pencil. Colerus had a portfolio of portraits by him of several distinguished men; among these was a sketch of Spinoza himself, in the dress of Masaniello.

In 1660 we find him living in Rhynsburg, near Leyden; and there among his friends we notice Henry Oldenburg, who had been the Hague consul in London, when Cromwell was Protector. He was also the intimate friend of Robert Boyle, and helped in the foundation of the Royal Society of Great Britain. The very first paper in the Transactions of that now illustrious society bears his signature. He writes from London to Spinoza in the year 1661, recalling their pleasant discussions on God, thought, extension, the union of the body and soul, and the philosophy of Descartes and Bacon.*

Another friend is Simon de Vries, who was true to him through life, and whose veneration is prettily expressed in that passage of a letter wherein he exclaims, 'Thrice happy is the young man living in the same house with you, who can see you at breakfast and dinner, who can walk with you, and listen to you on the highest subjects.' Upon which Spinoza characteristically replies, 'You need not envy my young inmate, against whom I jealously guard myself, and to whom I earnestly beg that you and other friends will not communicate my opinions until he has grown more ripe for them. At present he is too childish and volatile, impelled rather by curiosity than love of truth. But I hope that he will put aside these faults as he grows older; nay, as far as I can judge of his disposition, I feel sure of this, and on this account I take great pains with him.'† It was this young man that Spinoza instructed in the Cartesian philosophy, and for his use he began the composition of the 'Principles of Descartes geometrically demonstrated;' not for Simon de Vries, as is commonly said. This work was afterwards completed, and an appendix added, in which Spinoza indicated

* SPINOZA: *Epist.* i.

† VLOTEN: *Supplementum*, p. 295.

his chief point of divergence from Descartes. It was published by Meyer in 1664, and produced considerable stir among the Cartesians.

He left Rhynsburg for the Hague, and there among his warm friends was the celebrated and unfortunate Grand Pensioner, Jean de Witt. 'In all Holland,' says Mr. Froude, 'there were none like these two; they had found each other now, and they loved each other as only good men love. From him Spinoza accepted a pension, not a very enormous one—some thirty-five pounds a year; the only thing of the kind he ever did accept. Perhaps because De Witt was the only person he had met who exactly understood what it was, and weighed such favours at their exact worth, neither less nor more.'

This interpretation is consistent with all we know of Spinoza. On the death of his father, his two sisters, Rebecca and Miriam, tried to keep him from his inheritance, probably thinking that an excommunicated heretic had no claim on the money of the faithful. He appealed against them in a court of law; gained his cause, and having thus satisfied his sense of justice, gave up the contested property as a free gift, thus saving his sisters from fraud, and himself from an indignity. Later in life his affectionate pupil, Simon de Vries, brought him a thousand florins, entreating him to accept it as a slight payment of the heavy debt the pupil owed the teacher. Spinoza laughingly assured him that he was in no need of money, and that such a sum would turn his head. Simon then made a will, bequeathing the whole of his property to Spinoza, who, on hearing of it, at once set off for Amsterdam to remonstrate against an act so unjust to Simon's brother. His arguments prevailed. The will was destroyed, and the brother finally inherited. Now came a struggle of generosity. The heir protested that he could not accept the property unless he were allowed to settle five hundred florins a year on the disinterested friend; and, after some debate, Spinoza agreed to accept three hundred.

In 1673 Karl Ludwig, the Elector Palatine, anxious to secure so illustrious a thinker, offered him the chair of philosophy at Heidelberg. But whatever allurements there might otherwise have been in such a proposal was destroyed by the intimation that the Elector hoped he would avoid collision with existing creeds. 'I have never had any intention of teaching in public,' replied the philosopher, 'and if I give my time to expounding the first questions of philosophy, I shall perhaps not be able to make any advances in its deeper questions as I desire. Nor do I exactly understand within what limits my philosophy *can* be made to avoid collision with established creeds. Schisms do not arise so much from a genuine love of religion as from the interests and passions, and from that love of contradiction which prompts men to falsify and anathematise even what is true.'* And, therefore, the professorship was declined. Louis XIV. offered him a pension if he would dedicate his next work to him, but received for answer that the philosopher had no intention of dedicating anything to his majesty.

From these examples we may conclude that his acceptance of the pension from De Witt was grounded on a perfect confidence in the motives and the character of his friend. There is often as much generosity in accepting as in conferring an obligation; and as much vanity as independence in its rejection. All depends upon the nature of the existing relations, and the character of the friends.

A little incident, unnoticed by his biographers, but interesting as an indication of the state of opinion in those days, may here be related. If there is an error one might have expected the clear and penetrating intellect of Spinoza to have seen through, it is the error of the Alchemists: but this expectation is grounded on a misconception. Alchemy seems absurd to us because experience has abundantly shown that the processes of the alchemists were futile. In those

* ' . . . Quippe schismata non tam ex ardenti religionis studio oriuntur quam ex vario hominum affectu vel contradicendi studio, quo omnia etsi recte dicta sint, depravare et damnare solent.'—*Epist.* liv. p. 304.

days it seemed plausible enough; and that which conquered the assent of eminent men was not scientific deduction, but a striking fact. J. F. Schweitzer (known in Europe by his Latinised name of Helvetius) was then physician to the Prince of Orange, and notorious as an antagonist of the alchemists. It was, therefore, their interest to convert him. On the 27th of December, 1666, he received the visit of a stranger, who declined to give his name, but who came, he said, in consequence of the dispute between Helvetius and Kenelm Digby, and was prepared with material proofs of the existence of the philosopher's stone. After a sharp discussion, the stranger handed him an extremely small portion of yellow metallic powder, having the aspect of sulphur, assuring him it would transmute an ounce and a-half of lead into gold. He departed. Helvetius, in the presence of his wife, made the experiment. To his astonishment it succeeded. There was the ingot of gold, which all the goldsmiths and assayers of the Hague pronounced to be pure. He was startled into credulity. The fact mastered him, as striking facts so often master imperfect scepticism. He wrote an account of the whole adventure, and avowed his faith in the alchemy which hitherto he had derided. This made no little stir. Among the rest Spinoza was eager for precise details, and we have a letter from him dated 25th of March, 1667, in which he says, 'Your last letter of the 14th reached me safely, but various causes prevented my replying at once. I spoke to Vossius about the Helvetius affair, and he burst out laughing, wondering how I could occupy myself about such trivialities. But I, disregarding this contempt, went to the goldsmith who had assayed the gold, and whose name is Brechtett. He assured me that, in spite of Vossius, the gold during the fusion increased in weight on some silver being thrown into the crucible; hence, as he firmly believes, this gold which changes silver into gold, must contain something peculiar in itself. Not he alone, but divers other persons who were present at the time, assured me that such was the case. After this I went to Helvetius, who showed

me the gold and the crucible still having a little gold attached to its inside, and told me that he had strewn scarcely a quarter of a grain on the molten lead. He added that it was his intention to publish a brief history of the affair. This is what I have been able to learn of the matter.'

The trick which imposed upon Helvetius was adroit, and in those days the knowledge of chemistry was too imperfect, and the nature of experimental evidence too little understood, to suggest the presence of a trick. Spinoza, like the others, seems to have relied upon the purely irrelevant testimony of goldsmiths and bystanders; and on similar testimony spirit-rapping, witchcraft, and other delusions have been credited.

The next, and perhaps the most considerable, event to be recorded in Spinoza's life is the publication in 1670 of the *Tractatus Theologico-Politicus*. It is one of the boldest books ever written; and it was written at a time when boldness was far more perilous than it has been since; when philosophers had to use elaborate precautions in advancing even small heresies, and their skill was shown in insinuating what they could not openly avow. Spinoza had for some time resisted the entreaties of his friends; he foresaw the tumult that his opinions would arouse. Oldenburg writes to him in 1662, urging him to brave the ignorant mob and rely on the sympathy of the learned (a pretty reed to lean on!); and in 1665 he is still more pressing. 'What do you fear? Why hesitate? Begin, and you may be confident of the applause of all real philosophers. I never will believe that you would write anything against the existence and providence of God; and provided that these solid grounds of religion are respected, it is easy to excuse or defend any philosophic opinions.' Yet Oldenburg himself held very different language after publication; and proved that Spinoza's hesitation was well founded. What finally determined him is not known. Most probably a deep sense of the importance of his views at a period of widespread unrest, a period rife with sophisms. Holland was reposing on the laurels she had won in her long and desperate struggle against Spain. Having

freed herself from a foreign yoke, she might now have completed her canals, extended her commerce, and enjoyed the amenities of peace, had not theological faction disturbed it. A land of political freedom, an asylum for persecuted free-thinkers, it was torn by theological strife. The persecuted Jews might flock there from Portugal and Spain; the Protestants of France and Belgium found shelter there; but on their arrival these fugitives witnessed conflicts almost as savage as those from which they fled. Toleration was awarded to political thought; various religions were allowed to erect their churches; but within the pale of the State Church there was the old strife. What Spinoza wished to teach men was the essential nature of Religion, and the political nature of a church. He wished to see a complete separation of the temporal and spiritual powers, giving to the Church a purely political significance in outward observances, and leaving individual conscience free as to opinions. The State has a right to determine ceremonies and observances; but it violates every principle of justice if it attempts to coerce opinions or the expression of opinions. It would be impossible for men to continue to live in society unless each gave up his right of action in deference to the laws established for all. 'The right of action on his individual judgment ceases; but the right of action only, not the right of reasoning and judging.'

I shall have to speak more particularly hereafter of this book, which was everywhere condemned, interdicted, and, above all, 'refuted.' Even free-thinkers were staggered; yet it found some energetic admirers, who printed it under false titles, translated, and abridged it, thus disseminating its ideas. In England an abridgment appeared in 1720, and in 1737 a complete translation. What Spinoza thought of his 'refuters' may be gathered from a passage in one of his letters.* 'The other day I saw the book which the Utrecht professors have been writing against me hanging in a book-

* *Epist.* l. p. 299.

seller's window, and from the little I had time to read of it, it seemed not worth reading, much less answering. I let the book and its author alone. Mentally smiling, I thought how the men who are most ignorant are always those most audaciously ready to write.'

This *Tractate* made Spinoza's house the house of call for lion-hunters. Foreign ministers, foreign philosophers, men who admired him, men who execrated him, and men who were to 'refute him,' came to occupy his leisure with their talk. He conversed very freely with them, sketching all the while, often taking their portraits. Among these visitors we shall only here note Leibnitz, who never spoke of him but in terms unworthy of both these great intellects. This much is to be said for Leibnitz, however, that he never thoroughly understood Spinoza, and was shocked at the results of the system he so misconceived. If he never understood the simple Locke, we need not wonder that he failed to penetrate the meaning of Spinoza; that he did fail is conclusively and almost ludicrously shown in the posthumous work published by an admiring disciple,* of which I shall take no further notice. Nevertheless, whether Leibnitz understood or misunderstood Spinoza, one would have been glad of some record of their meeting and conversation.

The murder of De Witt must have been a great shock to Spinoza. It was the only occasion on which he is known to have lost all control over his emotions; and it must have recurred to him with solemn feeling when, on a visit to the great Condé, the report arose that he was a political spy, and the populace surrounded the house where he lived. 'Fear nothing,' he said to his terrified landlord; 'it is easy for me to justify myself. There are those who know the object of my journey. But whatever may arrive, as soon as the mob assembles, I will go out and meet them, even though I share the fate of De Witt.'

Annoyed at being misunderstood on points which seemed

* *Réfutation inédite de Spinoza. Par Leibnitz. Précédée d'un Mémoire par M. FOUCHER DE CAREIL. Paris, 1854.*

to him so clear, he shrank from the publication of his *Ethics*; and accordingly that work only saw the light after his death. He was timid and retiring, ill suited to the world and the world's ways, especially unsuited for conflict. A severe mysticism, like his, was not for vulgar minds. It wanted even the emotion which could commend it to mystical minds. For the peculiarity about him, that which distinguishes him from all other thinkers, is that he was a mystic whose mind moved with geometrical rigour and clearness; and his severe rigour of abstraction and deduction are as repellent to the vague emotional tendencies of the mystical mind, as the intense disinterestedness and passionlessness of his system are repellent to the ordinary mind.

Let us glance at his private life. Though very poor, from his scanty pittance he had something to spare for the necessities of others. On looking over his papers after his death, it was found that one day his expenses amounted to three halfpence, for a *soupe au lait* and a little butter, with three farthings extra for beer; another day, gruel, with butter and raisins, which cost him twopence halfpenny, sufficed for his epicurism; and as his biographer Colerus says, 'Although often invited to dinner, he preferred the scanty meal that he found at home to dining sumptuously at the expense of another.' In company with a few neighbours, he sat at the chimney corner, smoking his pipe and talking to them of what they could understand, not disturbing their creeds by any obtrusion of his own. No vanity of proselytism made him trouble the convictions of those unfitted to receive new doctrines. When his landlady, feeling, perhaps, that the assurance of so good and great a man was almost equal to the priest's, asked him whether he believed she could be saved by her religion, which she knew was not his, he replied, 'Your religion is a good one; you ought not to seek another, nor doubt that yours will procure salvation, provided you add to your piety the tranquil virtues of domestic life.' Nor was this, as some might suppose, the mere evasion of one who chose not to commit himself by

exposure of his heretical opinions; it was a part of the solemn earnestness with which he looked at life and accepted faith. Read the fourteenth chapter of the *Theological Political Treatise*, and see how he distinguishes between what is essential and what collateral in religion; how faith in God and love of God, with the consequent love of mankind, are in his eyes the sum of all religion; how, even, regarding religious dogmas, it is not essential that they should be true, so that they be truly believed; and how it by no means follows that those who can give the best reasons for their faith are truly the most faithful, but, on the contrary, those who live most according to justice and charity. He knew his hostess was not wise, but he saw that she was virtuous.

The children all loved him, and for them he would bring one of his lenses to show them the spiders magnified. It was his amusement to watch insects. The sight of spiders fighting would make the tears roll down his cheeks with laughter; a trait which Dugald Stewart thinks 'very decidedly indicates a tendency to insanity;* and satisfactorily accounts for the horrible doctrines of Spinozism. Hamann sees in it only the sympathy of one web-spinner for another: 'His taste betrays itself in a mode of thought which only insects can thus entangle. Spiders and their admirer Spinoza naturally take to the geometric style of building.'† This is only surpassed by Hegel's interpretation of his predisposition to Consumption being in harmony with his philosophy, in which all individuality and particularity were resolved into the One Substance.‡

He had been a delicate child, and although at no time

* DUGALD STEWART: *Dissertation prefixed to Encyclo. Brit.* Note LL. So readily are accusations made that even this amiable writer thinks it probable that Spinoza learned his irreligious principles from the chief school of Atheism, the Synagogue of Amsterdam, 'where without any breach of charity (!) a large proportion of the more opulent class may be reasonably presumed to belong to the Sadducees.'

† HAMANN: *Schriften*, i. 406.

‡ The play on words cannot be rendered in English: 'diese Schwindsucht übereinstimmend war mit seinem Systeme, in dem auch alle Besonderheit und Einzelheit in der Einen Substanz verschwindet.'

positively an invalid, he had always been weakly. The seeds of consumption slowly but inevitably undermined his strength, and on Sunday, 22nd February, 1677, he was so feeble that his kind host and hostess left him reluctantly to attend divine service. He feared that he was sinking. But he entreated them to go to church as usual. On their return he talked with them about the sermon, and ate some broth with a good appetite. After dinner they again went to church, but left the physician by his bedside. On their return all was over. At three o'clock he had expired in the presence of the physician—who paid himself by taking a silver-handled knife and what money lay on the table, and departed.

He died in his forty-fifth year, in the maturity of his intellect, but not before he had thoroughly worked out the whole scheme of his philosophy.

§ II. HIS DOCTRINES.

Although by its geometrical form Spinoza's system stands as it were apart from every other system, a slender acquaintance with the evolution of Philosophy enables us to recognise its affiliations with those that have preceded it. In particular we are aware of this system being only one more expression of the irrepressible yearning after unity which may be recognised in all speculation; it is one more effort to place Pantheism on a demonstrable basis. Had it not been for his method, he would at once have been claimed by the mystics. But his method and his language are so unlike the method and language of mystics that his conclusions startle and repel the very natures which have really most affinity with them; and this also in some degree, because the unsparing rigour of his logic and the unhesitating sincerity with which he follows it, bring into prominence ideas which are either overlooked or suppressed by thinkers less rigorous or less sincere.

The fervour and candour of his beautiful and fearless

spirit act upon our minds with searching and beneficent effect. His sincerity challenges our own. We cannot meditate on his thoughts and remain in apathetic vagueness. We must push to a conclusion. We must accept his teaching or refute it; and to refute it, we must reinvestigate the pretensions, not of his method only but of Metaphysical Method itself. It is on this ground that he merits the epithet of 'all-shattering.' A serious study of the *Ethics* may thus be a drastic purge clearing the mind of all the humours and vapours of Ontology. It was this to me. I never hoped to find terra firma in the boundless marsh of metaphysics after I had clearly seen the reasons which rejected Spinozism.

An attempt will here be made to exhibit the cardinal points of the doctrine. I cannot pretend, in reasonable limits, to anything like an exhaustive treatment, but only to furnish as it were an introduction. And before doing even this, it will be requisite to glance at the work by which Spinoza is more generally known, the *Tractatus Theologico-Politicus*, and to indicate its relation to modern Rationalism which it has profoundly affected. While the *Ethics* must be acknowledged to have penetrated deeply into German Philosophy, the *Tractatus* may be almost considered as the parent of German Rationalism. The various schools of criticism, as is well known, bring to the interpretation of Scripture principles which greatly alter the significance of many doctrinal points. 1. The stricter interpretation of the text, initiated by Ernesti, Michaelis, and Semler, who sought by the application of *philological* canons to ascertain the meaning which the biblical writers attached to their words, and sought thus to clear away the incrustation of successive depositions of opinion which in the lapse of ages had gradually hidden the original significance. 2. The *rationalistic* interpretation of Eichhorn and Paulus, who explained the miraculous narratives as the naïve, or superstitious, investiture given by the Hebrew mind to real historical events, which were in accordance with the order of nature, and only seemed miraculous

because not understood. 3. The *moral* interpretation of the Kantists, who sought to disengage from the mixed contents of the Scriptures the moral element which approves itself to reason. 4. The acute application to the Old Testament of *historical* criticism, by which De Wette and others have endeavoured to demonstrate that the Pentateuch is a compilation of comparatively late origin, and that the subsequent historical books are unreliable. 5. The *mythical* interpretation, which is a result of modern research into the character of early national records and mythologies.

These five methods of interpretation are all more or less anticipated in the critical observations and rules of interpretation embodied in Spinoza's treatise. Wiser than the majority of critics who succeeded him, and who profited by the labours of a century of research, Spinoza saw clearly that the influences which determined so complex a result as the Hebrew Scriptures must themselves be complex, and therefore to attempt an explanation of these writings as the manifestation of a single tendency must issue in failure. In the second, third, and sixth chapters of the *Tractatus*, the rationalistic, philological, and moral methods will be recognised at once; and in the sixth chapter the general unreliability of historical documents and the mythical tendency of the human mind are clearly enunciated. There is room for doubt indeed as to the nature of Spinoza's own view of the Scriptures: two opinions seem to be expressed in different passages: one which regards the Scriptures as containing an exceptional revelation, differing not only in degree but in kind from all other revelations (he speaks of the prophets other nations have possessed), and consequently, although to be interpreted by reason, having a higher source than reason; the other opinion, which regards the Scriptures as exceptional only in so far as they contain a deeper wisdom and a higher morality, in this sense also a revelation, but one differing in degree, not in kind, from other revelations. Had Spinoza's purpose been theological, he would doubtless have avoided any such ambiguity; but his purpose was practical; he dealt

with the religion which he found established, and tried to make those who followed it follow it according to reason. The treatise was theological only in a subordinate degree; it was theologico-political—the object was political. He did not want to settle points of theological controversy, he wanted to inculcate principles of liberty and toleration. Read his exposition of the real Catholic faith, towards the close of the fourteenth chapter, and his theological position will be quite clear.

Another apparent anticipation of modern views is seen in those passages in which he speaks of Christ as a higher manifestation of the Divinity than any other member of the human race—as the actual representative of Ideal Humanity.* I say *apparent* anticipation, for his words are susceptible of another interpretation, and it is also possible to understand them as having been uttered from a point of view lying between his actual opinion and the opinion he is controverting as an accommodation to the conviction of his readers. We have, however, in his letter to Oldenburg† an explicit statement of his meaning. Oldenburg told him that people said he concealed his real opinion about Jesus Christ, the Redeemer of the world and sole Mediator for men, as also about the incarnation; upon these points Oldenburg begs him to open his soul frankly. Spinoza replies in this language: ‘To show you undisguisedly my opinion on that point, I answer that it is not absolutely necessary to know Christ according to the flesh; but it is very different when we speak of that Son of God, that is to say that Eternal Wisdom manifested in all things, and yet more fully manifested in the human soul, and far above all in Jesus Christ. For without this no one can attain the state of beatitude, since it alone teaches us what is true and what is false, what is good and what is bad. And because this Wisdom, as I have said, was manifested in Jesus Christ in the fullest way, therefore his disciples, to whom it was revealed by him, could preach it, and they showed that they could glory in being

* See especially chaps. i. and ii.

† *Epist.* xxi.

filled with the spirit of Christ more than other men were. For the rest, when certain churches add that God himself assumed human nature, I have expressly warned the reader that I do not understand what is said; indeed to speak freely, it seems to me as absurd as if they said that a circle had put on the nature of a square.'

This opinion is one which coincides with the cardinal position in Schleiermacher's system; and with this, and other passages before us in which a divine mission is attributed to Moses, we need not wonder if Schleiermacher and Herder in perfect sincerity claimed Spinoza as a Christian, since in their sense of the word Christianity was as compatible with the Pantheism of Spinoza as it has been with other modifications of Pantheism. The English theologian will probably deny the compatibility of Christianity with any form of Pantheism; for on a rigorous interpretation of Christian theism the two *are* irreconcilable: but in Germany this difficulty is seldom felt, and Spinoza's teaching is accepted by sincere Christians.

There is one more passage in the *Tractatus* which may arrest us for a moment. It is but three lines in the ninth chapter where he speaks of the Kabbalists, whom he designates as 'charlatans,' adding that their folly surpasses description. Spinoza, we are frequently told, 'borrowed his system from the *Kabbala*;' at other times we hear that he 'did nothing but modify the system of Descartes.' Such accusations are singularly rash, and spring as often from a secret desire to depreciate a great man as from the levity of ignorance. I am not acquainted with the doctrines of the *Kabbala*; nor indeed are the most of those who prefer the charge; but if the *Kabbala* contain Spinoza's doctrine, why have not others besides Spinoza rescued it? All Europe venerates Spinoza; who now studies the *Kabbala*? In truth, the charge of borrowing is frivolous; some resemblance there may be, must be, between ideas in the *Kabbala* and ideas in the *Ethics*; a system of philosophy does not stand alone, cut sheer off from all connection with the ideas of other systems;

the same law of organic conformity which makes the whole zoological series one, without preventing the independent individuality of each animal, holds good in the world of thought. We may inquire what resemblances exist, without seeking to break down the barriers of organic independence. Yet this is constantly attempted. First men deny that a doctrine is true, and next they deny that it is new. They seem to fancy that truth can be waved aside by exclaiming : ' Ah ! that is borrowed from Aristotle ; or that is what Bacon has said.' If Aristotle and Bacon did say it, so much the better ; the truth of which no one has had a glimmering before us will rarely be repeated after us. Spinoza profited by the wisdom of his age, and thought the thoughts which others unknown to him had also woven into systems ; but if ever there was an original and independent thinker Spinoza was that thinker.

The study of the *Tractatus* requires no peculiar preparation. The book is not attractively written, but is perfectly intelligible. It is otherwise with the *Ethics* ; the transparent clearness of the language and the mathematical rigour of the composition only serve to make any initial misconception more misleading. Spinoza uses words in senses which he carefully defines, but he uses words which are generally interpreted in senses removed from those he assigns to them ; and consequently a reader not duly warned is apt to disregard the definition, and to read Spinoza as he reads an ordinary writer. This mistake is almost inevitable on the part of those who get his doctrine at second hand. For example, they meet with the familiar word Substance, which in their service generally connotes ideas carefully separated from the idea of God ; and this word they find chosen by Spinoza to designate God. In spite of definitions, in spite of etymological and philosophical justifications, in spite of an admission that the *substans*, or underlying reality and ever living existence, must indeed be God, the old connotations exercise an intolerable tyranny, and the coercion of

words over thoughts is such that most men find it impossible, and all men find it difficult, to dissociate the idea of Substance from those suggestions of transitory and ignoble phenomena which the word commonly connotes. Hence when Spinoza says that God is the only Substance, he seems to be affirming the crudest atheism. Had he used Greek instead of Latin, and called the substance *Noumenon*, this association would have been escaped. Whenever you meet with the word Substance in his teaching, substitute for it the phrase 'ground of existence,' and you will remove a diffracting medium which greatly obscures the meaning. God is existence. He alone truly exists. Whatever else may be conceived as existing exists in and through him; it is a manifestation of his being. This also is the language of St. Paul, which is chosen by Spinoza as his epigraph. 'In Him we live and move and have our being.' Is it not curious to note how slight a verbal change will dispel the common charge of atheism, and show that in denying the reality of the transitory world Spinoza affirmed the reality of God as the one fountain of all life.

A second ambiguity lies in the fourth axiom: 'the knowledge of an effect depends on, and implies, the knowledge of its cause.' Interpreted in the ordinary sense, this axiom is absurd; and Mr. Hallam so interpreting it was justified in qualifying it as grounded on a fallacy. 'The relation between cause and effect,' he said, 'is surely something perfectly different from our perfect comprehension of it, or indeed from our having any knowledge of it at all.' But the fallacy does not lie there. The axiom does not affirm that men are incapable of recognising a sequence while ignorant of an antecedent; as if a man receiving a blow in the dark could not recognise the pain (effect of the blow) until he had recognised the striker: it means that a complete and comprehensive knowledge of the effect implies a complete and comprehensive knowledge of the cause, for an effect is a cause realised; and 'things which have nothing in common cannot be understood by means of each other, i. e.

the conception of one does not involve the conception of the other.' Thus if an effect be different from its cause its conception does not involve the conception of the cause, but if it be the same as the cause, then the conception of the one involves that of the other, *ergo* the more complete our knowledge of the one the more complete our knowledge of the other. Spinoza is rigorously consistent. We may object, *in limine*, to his assumption that we can know anything whatever of cause, beyond the fact of an antecedent group of conditions, and of effect, beyond the fact of a consequent group of conditions; but, granting his postulate, we must accept his conclusions; and very important conclusions are drawn by him from this conception of cause.

With these indications of the necessity of carefully ascertaining the sense in which he uses terms, let us pass to the consideration of the relative position of his system among systems.

The relation of the Finite to the Infinite, the creation to the Creator, has been an eternal problem of ontological research; a problem which no man has solved; and no man can be blamed if he find it insoluble. Three answers have been given at various epochs; and only three seem possible. Every system is an acceptance of one of these answers, under modifications more or less pronounced.

First Answer: There are two coeternal principles: Mind and Matter.

Second Answer: There is but one eternal principle, the source and reality of all existence. This principle is sometimes conceived as Mind, material phenomena being thoughts—objects in representation, not objects of representation; and sometimes as Matter, mental phenomena being cerebral activities.

Third Answer: There is but one eternal principle, the source of all existence, but not its reality; the creator of the universe, but apart from it.

The peculiarity of this third answer is its evasion of the primal difficulty—creation—which is thus postulated as a

pure act of power working upon no material whatever. God is not conceived as fashioning the universe out of existing elements as in the old Grecian hypothesis of a prime mover. Nor, on the other hand, is he supposed to have drawn the material from himself as in the emanation hypothesis which identifies the universe with God. God is conceived as distinct from the universe both in power and in essence; and the mystery of creation is cleared up in the light of omnipotence. A fiat goes forth; the universe is realised. The creative Will condenses Nothing into Matter. The pagans said, *ex nihilo nihil*. The Christian Fathers altered it to *ex nihilo omnia*, and dismissed the difficulty with a reference to omnipotence. They were perfectly aware of the logical contradiction. They acknowledged it to be untenable by reason. It was not meant for reason. Reason was incompetent to solve such problems.

Which of these three answers satisfied Spinoza? The unprepared reader will perhaps be surprised to learn that it was the third, or Christian, answer to which he most nearly approximated, although he modified it in a way which rendered it execrable to Christian theology. He was uneasy under the logical contradiction. He was not the man to say, *credo quia absurdum*, and to flout human reason by opposing its plain requirements. Creation out of nothing was untenable, and he would not pretend to hold it. Nevertheless he saw other difficulties in the other answers. The first separated God from the universe without furnishing a plausible interpretation of the process by which two coeternal principles came into union, or indeed how one could act upon the other. The second answer was equally at fault. As Idealism it ignored the reality of Matter; as Materialism it ignored the reality of Mind: two primal realities not to be discarded. The evidence for the existence of one was the same as the evidence for the existence of the other; yet one could not be resolved into the other. To disregard either was to violate first principles. Both must be grasped in an energetic synthesis. That synthesis is God: the one principle having

Thought and Extension as two eternal and infinite attributes, constituting its essence. Thus, given the one supreme principle, Existence, we see its necessary duplicate manifestation, as Mind, under one aspect, and under the other as Matter. This is the meaning of creation. This is the explanation of the difficulty. Creation is not the calling into existence of that which had no being out of that which has no being; nor is it the refashioning of elements which have independent being; it is the outflowing of primal energy, the activity necessary to a self-caused and self-causing existence. This universe considered as a moment in the universal life is truly a creation. From God it came, and in God it exists, not in alien difference, but in vital unity. From God all flows out, and to him all returns. Everything is a form of that which ever is. God is, and is not, Nature; identical, but not the same; he is no more to be confounded with nature than the fountain with the rivulet, eternity with time. God is *natura naturans*, Nature is *natura naturata*. The one is the energy, the other the act.

A similar line of argument solves the problem of the union of Soul with Body. By one school these words are taken as representatives of two distinct essences, irreconcilable in their nature, yet mysteriously accordant in their existence. By another school the two are resolved into one, either as Idealism, denying substantive reality to Body, which is admitted only as an act of Thought; or as Materialism, denying substantive reality to Mind, which is admitted only as one of the phenomena of body. Spinoza affirms the equal reality of both, and their distinction in a higher synthesis. They are not substances at all, but the two correlated attributes which constitute the essence of substance. Man is but a mode of the Divine Existence: his mind a spark of the Divine Flame: his body a mode of the Infinite Extension.

One more remark is needful as a preparation to the study of this system. The aim of philosophy is doubtless the solution of problems, but it is also the working out of theorems: the problem, when solved, furnishes a means of

regulating life: Ontology is the introduction to Ethics. Life is to be so regulated that the soul may achieve the highest good; and what is that but the love of God? This love must be founded upon knowledge; perfect knowledge bringing perfect love. And what is perfect knowledge? The harmony of our thoughts with the divine order. We may indeed love God without knowing him clearly; but it is impossible to have clear knowledge without perfect love; and clear knowledge is only to be gained through a method which discloses the divine order. Error and doubt arise from disorder, not from native incompetence. Truth is the harmony between the order of ideas and the order of things. Let a man begin where he ought to begin, and proceed in rigorous deduction unfolding each successive consequence, never letting drop a single link in the chain which unites things, and he will never doubt, for then all his ideas will be clear and distinct, and their order will be the order of things.* . . . *Ordo et connexio idearum idem est ac ordo et connexio rerum.*†

There are two methods of investigation: the vulgar and the scientific. The one starts from principles which have been accepted without examination, which are not therefore clearly understood. The other starts from principles clearly defined and accurately known. It is the latter only which can lead to true knowledge. Its type is mathematics. It comprehends every object because it understands the immediate cause of the object. Nothing arises except as the necessary sequence of what preceded it, and as the inevitable result of the nature of things. To understand any object, therefore, we must understand its connections. And these are displayed after the mathematical method.

Thus is the form chosen by Spinoza justified by his principles. It is a form, as I said, extremely unlike that of all other mystical philosophies, and by no means attractive to the ordinary mind. But it is eminently consistent. It

* SPINOZA: *De intellect. Emend.* ii. 37.

† *Ethica*, ii. prop. vii.

developes the order of the universe from a few definitions and axioms. These may be given here :—

‘ DEFINITIONS.

- I. By a thing which is its own Cause I understand a thing the essence of which involves existence ; or the nature of which can only be considered as existent.
- II. A thing finite is that which can be limited (*terminari potest*) by another thing of the same nature, e. g. body is said to be finite because it can always be conceived as larger. So thought is limited by other thoughts. But body does not limit thought, nor thought limit body.
- III. By Substance I understand that which exists in itself and is conceived *per se* : in other words, the conception of which does not require the conception of anything else antecedent to it.
- IV. By Attribute I understand that which the mind perceives as constituting the very essence of Substance.
- V. By Modes I understand the accidents (*affectiones*) of Substance ; or that which is in something else, through which also it is conceived.
- VI. By God I understand the Being absolutely infinite, i. e. the Substance consisting of infinite Attributes, each of which expresses an infinite and eternal essence.
Explanation : I say absolutely infinite, but not infinite *suo genere* ; for to whatever is infinite only *suo genere*, we can deny infinite Attributes ; but that which is absolutely infinite includes in its essence everything which implies essence, and involves no negation.
- VII. That thing is said to be free which exists by the sole necessity of its nature, and by itself alone is determined to action. But that thing is necessary, or rather constrained, which owes its existence to

another, and acts according to certain and determinate causes.

VIII. By Eternity I understand Existence itself, in as far as it is conceived necessarily to follow from the sole definition of an eternal thing.

These are the Definitions; they need not long be dwelt on, although frequently referred to by him; above all, no objection ought to be raised against them, as unusual, for they are the meanings of various terms in constant use with Spinoza, and he has a right to use them as he pleases, provided he does not afterwards depart from this use, which he is careful not to do. We now come to the seven

AXIOMS.

- I. Everything which is is in itself, or in some other thing.
- II. That which cannot be conceived through another (*per aliud*) must be conceived through itself (*per se*).
- III. From a given determinate cause the effect necessarily follows; and *vice versâ*, if no determinate cause be given, no effect can follow.
- IV. The knowledge of an effect depends on the knowledge of the cause, and implies it.
- V. Things that have nothing in common with each other cannot be understood by means of each other, i. e. the conception of one does not involve the conception of the other.
- VI. A true idea must agree with its object (*idea vera debet cum suo ideato convenire*).
- VII. Whatever can be clearly conceived as non-existent, does not, in its essence, involve existence.

To these succeed the Propositions, of which only the first eight need be given here:—

PROP. I. Substance is prior in nature to its accidents.

Demonstration. Per Definitions 3 and 5.

PROP. II. Two Substances, having different Attributes, have nothing in common with each other.

Demonst. This follows from Def. 3 ; for each Substance must be conceived in itself and through itself ; in other words, the conception of one does not involve the conception of the other.

PROP. III. Of things which have nothing in common, one cannot be the cause of the other.

Demonst. If they have nothing in common, then (per Axiom 5) they cannot be conceived by means of each other ; *ergo* (per Axiom 4) one cannot be the cause of the other.
Q. E. D.

PROP. IV. Two or more distinct things are distinguished among themselves either through the diversity of their Attributes or through the diversity of their Modes.

Demonst. Everything which is is in itself or in some other thing (per Axiom 1), that is (per Def. 3 and 5), there is nothing out of ourselves (*extra intellectum*) but Substance and its Modes. There is nothing out of ourselves whereby things can be distinguished amongst one another, except Substances, or (which is the same thing, per Def. 4) their Attributes and Modes.

PROP. V. It is impossible that there should be two or more Substances of the same nature, or of the same Attribute.

Demonst. If there are many different Substances, they must be distinguished by the diversity of their Attributes or of their Modes (per Prop. 4). If only by the diversity of their Attributes, it is thereby conceded that there is nevertheless only one Substance of the same Attributes ; but if by the diversity of their Modes it follows that Substance being prior in nature to its modes, it must be considered independently of them ; that is (per Def. 3 and 6), cannot be conceived as distinguished from another ; that is (per Prop. 4), there cannot be many Substances, but only one Substance. Q. E. D.

PROP. VI. One Substance cannot be created by another Substance.

Demonst. There cannot be two Substances with the same

Attributes (per Prop. 5); i. e. (per Prop. 2) having anything in common with each other; and therefore (per Prop. 3) one cannot be the cause of the other.

Corollary. Hence it follows that Substance cannot be created by anything else. For there is nothing in existence except Substance and its Modes (per Axiom 1, and Def. 3 and 5); now this Substance, not being created by another, is self-caused.

Corollary 2. This proposition is more easily to be demonstrated by the absurdity of its contradiction;—for if Substance can be created by anything else, the conception of it would depend on the conception of the cause (per Axiom 4), and hence (per Def. 3) it would not be Substance.

PROP. VII. It pertains to the nature of Substance to exist.

Demonst. Substance cannot be created by anything else (per Coroll. Prop. 6), and is therefore the cause of itself; i. e. (per Def. 1) its essence necessarily involves existence; or it pertains to the nature of Substance to exist. Q. E. D.

PROP. VIII. All Substance is necessarily infinite.

Demonst. There exists but one Substance of the same Attribute; and it must either exist as infinite or as finite. But not as finite, for (per Def. 2) as finite it must be limited by another Substance of the same nature, and in that case there would be two Substances of the same Attribute, which (per Prop. 5) is absurd. Substance therefore is infinite. Q. E. D.

Scholium.—I do not doubt that to all who judge confusedly of things, and are not wont to inquire into first causes, it will be difficult to understand the demonstration of Prop. 7, because they do not sufficiently distinguish between the modifications of Substance and Substance itself, and are ignorant of the manner in which things are produced. Hence it follows that, seeing natural things have a commencement, they attribute a commencement to Substances; for he who knows not the true causes of things confounds

all things, and sees no reason why trees should not talk like men; or why men should not be formed from stones as well as from seeds; or why all forms cannot be changed into all other forms. So, also, those who confound the divine nature with the human naturally attribute human affections to God, especially as they are ignorant how these affections are produced in the mind. But if men attended to the nature of Substance, they would not in the least doubt the truth of Prop. 7; nay, this proposition would be an axiom to all, and would be numbered among common notions. For by Substance they would understand that which exists in itself, and is conceived through itself; i. e. the knowledge of which does not require the knowledge of anything antecedent to it. But by modification they would understand that which is in another thing, the conception of which is formed through the conception of the thing in which it is, or to which it belongs: we can therefore have correct ideas of non-existent modifications, because, although out of the understanding they have no reality, yet their essence is so comprehended in that of another that they can be conceived through this other. The truth of Substance (out of the understanding) lies nowhere but in itself, because it is conceived *per se*. If therefore anyone says that he has a distinct and clear idea of Substance, and yet doubts whether such a Substance exist, this is as much as to say that he has a true idea, and nevertheless doubts whether it be not false (as a little attention sufficiently manifests); or, if any man affirms Substance to be created, he at the same time affirms that a true idea has become false; than which nothing can be more absurd. Hence it is necessarily confessed that the existence of Substance, as well as its essence, is an eternal truth. And hence we must conclude that there is only one Substance possessing the same Attribute; a position which requires here a fuller development. I note therefore—

1. That the correct definition of a thing includes and expresses nothing but the nature of the thing defined. From which it follows—

2. That no definition includes or expresses a distinct number of individuals, because it expresses nothing but the nature of the thing defined; e.g. the definition of a triangle expresses no more than the nature of a triangle, and not any fixed number of triangles.

3. There must necessarily be a distinct cause for the existence of every existing thing.

4. This cause, by reason of which anything exists, must be either contained in the nature and definition of the existing thing (viz. that it pertains to its nature to exist) or else must lie beyond it—must be something different from it.

From these positions it follows that, if a certain number of individuals exist, there must necessarily be a cause why that number exists, and not a larger or smaller number: e.g. if in the world twenty men exist (whom, for greater perspicuity, I suppose to exist at once, no more having previously existed), it will not be sufficient, in order to show the reason why twenty men exist, to point to human nature as the cause, but it will further be necessary to show why only twenty men exist, since (per note 3) there must be a cause for the existence of everything. This cause however (per notes 2 and 3) cannot be contained in human nature itself; for the true definition of man does not involve the number twenty. Hence (per note 4) the cause why twenty men exist, and why each individual exists, must lie beyond each of them; and therefore must we absolutely conclude that everything, the nature of which admits of many individuals, must necessarily have an external cause. As therefore it pertains to the nature of Substance to exist so must its definition include a necessary existence, and consequently from its sole definition we must conclude its existence. But as from its definition, as already shown in notes 2 and 3, it is not possible to conclude the existence of many Substances *ergo* it necessarily follows that only *one* Substance of the same nature can exist.'

In this style of unimpassioned deduction he proceeds,

adding link to link in the chain of demonstration, evolving a system of Theology, Psychology, and Ethics, which alternately impresses the reader with its symmetry and sublimity, and distresses him with its pitiless destruction of long-cherished beliefs; now rousing his enthusiasm for its lofty disinterestedness, now repelling him by its disregard of his personality and his hopes. God is the ever-present reality; man but a foam-bubble reflecting the transitory gleams of a diviner light. Love and resignation are the guiding ideas; and yet they lead to conclusions which alarm the reader, who unable to see where the defect in the argument lies, is irritated at the pedantic rigour which forces his reluctant assent. No wonder if he brand Spinoza as an atheist sweeping away the only firm support of morality—a responsible personality. No wonder if he reject a system which resolves personality into a mere mode of the Infinite; which dissolves in the acid of causality every shred of organic independence; which makes liberty impossible, and, depriving even God of understanding and will, sweeps the world clear of all purpose, good or evil. This is not the conception of God, or of the world, which he finds tolerable. He rises angrily against the conception of a world of unalterable sequences, where everything is determined by *conditions*, nothing by *purposes*: a system of results, not of aims. He is impatient of the logic which proves that phenomena are not brought about by a conscious intention, but are the simple sequences of God's nature.

He is called upon to renounce his own conception of a sublime Fatherhood, an Infinite Personality—greater than man by all the incommensurable difference of infinite and finite, yet like man by all the resemblance of creator and creature—in favour of a God whose essence is impersonality, who is the one Indeterminate, the Unconditioned, to whom individuality, personality, and conditions, cannot be applied without contradiction, and consequently to whom even intellect and will cannot belong, there being no analogy between the nature of God and the nature of man. Spinoza

is explicit: Although he makes Thought one of the constituent attributes of God, he denies that intellect or will can pertain to the Infinite, if by these words we mean powers similar to those in man; in God these no more resemble what we so name in man than the dog-star resembles a dog.*

If this be so, how can there be purposes in creation, i. e. final causes? With the disappearance of the intellect disappears the faculty of conceiving purposes: with the disappearance of the will disappears the power of acting in subordination to a purpose. God as existence and perfection is necessarily without aims. Men act with a purpose; and think they act in freedom, because they are conscious of desires, but not of the causes which determine these desires. A stone whirling through the air, and imagining itself to be flying, is an image of man acting and believing himself free.

I will here quote the famous Appendix on Final Causes which concludes the first book of the *Ethics*.

‘Men do all things for the sake of an end, namely, the good, or useful, which they desire. Hence it comes that they always seek to know only the final causes of things which have taken place, and when they have heard these, they are satisfied, not having within themselves any ground for further doubt. But if they are unable to learn these final causes from some one else, nothing remains to them but to turn in upon themselves, and to reflect on the ends by which they are themselves wont to be determined to similar actions; and thus they necessarily judge of the mind of another by their own. Further, as within themselves and out of themselves they discover many means which are highly conducive to the pursuit of their own advantage—for example, eyes to see with, teeth to masticate with, vegetables and animals for food, the sun to give them light, the sea to nourish fish, &c.—so they come to consider all natural things as means for their benefit: and because they are aware that these things have been found, and not prepared by them, they have been

* SPINOZA: *Ethica*, i. prop. xvii. schol.

led to believe that some one else has adapted these means to their use. For after considering things in the light of *means*, they could not believe these things to have made themselves, but arguing from their own practice of preparing means for their use, they must conclude that there is some ruler or rulers of nature endowed with human freedom, who have provided all these things for them, and have made them all for the use of men. Moreover, since they have never heard anything of the mind of those rulers, they must necessarily judge of this mind also by their own; and hence they have argued that the gods direct all things for the advantage of man, in order that they may subdue him to themselves, and be held in the highest honour by him. Hence each has devised, according to his character, a different mode of worshipping God, in order that God might love him more than others, and might direct all nature to the advantage of his blind cupidity and insatiable avarice. Thus this prejudice has converted itself into superstition, and has struck deep root into men's minds; and this has been the cause why men in general have eagerly striven to explain the final causes of all things. But while they have sought to show that Nature does nothing in vain (i. e. which is not fit for the use of men), they seem to me to have shown nothing else than that Nature and the gods are as foolish as men. And observe, I pray you, to what a point this opinion has brought them. Together with the many useful things in nature, they necessarily found not a few injurious things, namely, tempests, earthquakes, diseases, &c.; these they supposed happened because the gods were angry on account of offences committed against them by men, or because of faults incurred in their worship; and although experience every day protests, and shows by infinite examples that benefits and injuries happen indifferently to pious and ungodly persons, they do not therefore renounce their inveterate prejudice. For it was easier to them to class these phenomena among other things, the cause of which was unknown to them, and thus retain their present and innate condition of ignorance,

than to destroy all the fabric of their belief, and excogitate a new one.'

I have thus presented the two aspects of Spinoza's doctrine, neither exaggerating its mystical unction and logical rigour, nor softening its harsh angles of heterodox offence. The mysticism and logic are so little to the taste of mankind in general, and the heterodoxy is so exasperating, that it is intelligible how the majority, even of charitable readers, misconceived the spirit of the doctrine, and stood aghast at its conclusions. The wonder is that many Christian thinkers could have seen through such husks, and detected the wholesome grain within. It is not often that theological and philosophical outcries are so excusable. The tumult and the wrath excited by Spinozism were indeed unreasoning. Men's minds flew off at a tangent on the first alarm, and instead of patiently following out Spinoza's thought in his own calm spirit of research, they followed it out in their hot illogical way, first thrusting conclusions upon him which he would have repudiated, and then yelling in horror at him for teaching these conclusions. But let us be just. It was only on a patient and comprehensive study that men could learn what Spinoza really taught; and this patient study they were too angry to give. Besides, the study was laborious, and vituperation was easy. If the temper of the philosophic world has changed, and a more impartial consideration has led to a loving admiration, even where accompanied with profound dissent, this very impartiality is a result of the increased liberty which he was instrumental in developing. Whatever may be thought of his system, we must admit that from the first a strengthening and liberalising influence has rayed out from it, affecting even angry antagonists. There was something in the noble calmness and unaggressive fearlessness of his attitude which acted like a mental tonic. There was also the incidental flash of light falling on many ancient prejudices. There was the unswerving conviction in the force of truth, and in the universality of law. There was the constant exhibition of the relativity of knowledge.

Finally, there was the disinterestedness and purity of his moral views, and the quiet beauty of his own life, to answer the vulgar accusations against free thought as destructive of morality.

We find few expressions of this influence during the first years of controversy, but I do not think the influence was inoperative even then. It was, indeed, for the most part unconscious. Men thought him a monster, and said so. It was a period of theological ferment. The speculative unrest which had produced the Reformation was far from having been stilled by the Reformation. The orthodox party had, indeed, proclaimed finality. It proclaimed liberty of private judgment; but it restricted that liberty within very narrow and very arbitrary limits. Every man might read the Scriptures; but no man might read in them more than the orthodox reformers read. Comprehensive liberty was denounced as anarchy. In vain. The human mind alternately longs for, and rejects, finality. In spite of ecclesiastical thunders the movement of mind could not be arrested. Anarchists were numerous, and violent because violently opposed. While orthodoxy was on the alert to scent atheism from afar, and authority branded small heresies with the largest letters, free-thinking works became more and more numerous and noisy. The seventeenth and eighteenth centuries are specially distinguished by their free-thinking literature. The question was frequently discussed whether Atheism or Superstition were the most noxious to society,* and Atheism became the false but significant synonym of religio-eruditorum. The theological journals of the time had a special rubric under which they noticed atheistical works. But we must not too hastily conclude that many atheistical works existed; for if men denied the existence of the Devil, or even of Ghosts, they found themselves classed among the atheists.

* PRITIUS: *Dissertatio de Atheismo in se fædo et humano genere noxio*; 1695.
 GRAPPIUS: *Dissert. an Athrismus necessario ducat ad corruptionem morum*; 1697.
 ELSWICH: *Disputatio de controversiis novis circa Atheismum*—cited in HETTNER: *Litteraturgeschichte des 18. Jahrhunderts, dritter Theil*, i. 42.

In a society thus alert for atheism, and the alarms of atheism, Spinoza's writings must have fallen like bombshells. But I note one remarkable fact: He has neither disciples, nor searching antagonists. There are many who adopt some of his conclusions, but no one takes up his doctrine as a system, preaching it, applying it, developing it. There are hundreds who write refutations, and thousands who denounce him with bitter and scornful contempt; but no one, not even Leibnitz himself, grapples with the system and overthrows it, or even shakes it. Fierce blows have often been aimed at it; but they have beaten the air, not touched the system. A recent Dutch antagonist, Van der Linde, has indicated several insurgent thinkers, who, in Holland, adopted the principles of the *Tractatus* with more or less fervour;* and the pietist, Edelmann, in Germany, may be named along with these. But neither in Holland nor in Germany has there been a Spinozist, as there have been Cartesians, Kantists, and Hegelians, although German philosophy is in some sense saturated with Spinozism, and Hegel says, 'You are much of a Spinozist, or you have no standing whatever in philosophy.'†

This exceptional position has significance. It implies, I think, that the system contains within it some fundamental defect, which prevents even sympathetic students from taking it up into the framework of their daily thoughts, and adopting it as a philosophy. It also implies that the system is so rigorously constructed as only to be overturned by a lever applied to its foundations; and metaphysicians are indisposed to apply the lever *there*. This at any rate is how the case presents itself to me, read by the light of my own experience. On many grounds Spinoza attracted me. I studied him with eagerness and veneration, desirous to find a solution of all difficulties. But in vain. Conscious of a great debt to him, greater, indeed, than to any other metaphysician, I

* VAN DER LINDE: *Spinoza, seine Lehre und deren erste Nachwirkungen in Holland*. 1862, p. 134.

† HEGEL: *Gesch. der Philos.* iii. 369. 'Du hast entweder den Spinozismus oder gar keine Philosophie.'

cannot say that I was at any period a disciple. It was a long while before I knew why.

The fundamental difficulty of Spinozism is the impossibility of Metaphysics, or to speak more precisely, of Ontology. The false Method is the fountain of error. If the Method be allowed, the system must be accepted; if Ontology is a possible science, Spinozism is the most perfect form it has yet received. This will be strenuously denied by metaphysicians; nor can I pause here to argue so large a question. They will add, perhaps, that my denial of Ontology does not wholly meet the case, since other speculators besides Spinoza have employed the same Method, and, nevertheless, have gained disciples; if these disciples have shown alacrity in setting up as masters in their turn, and disowned their allegiance, they have for a time, at least, been disciples. Why has this success been denied to Spinoza? The answer is that it has been denied to him because his doctrine did not, as theirs did, admit of endless misapprehension and equivocation. Had their foundations been exposed, their superstructures unsupported by flying buttresses, and unconcealed by moving clouds, their tottering architecture would have sheltered none whom Spinoza's visionary fabric left unhoused.

The fundamental mistake of the Metaphysical Method is that it attempts to explain the scheme of the visible from the invisible, deduces the knowable from the unknowable. In Physics we pass, by verified inductions, from the visible to the invisible, from the known to the unknown. The bulk of our facts relates to the invisible, but they are so intimately dependent on the visible, of which, indeed, they are simple deductions, that we feel the same certainty respecting them as respecting any visible fact; they are demonstrable because they are presentable to consciousness under the forms of the known. It is otherwise with Metaphysics, which proceeds on unverified deductions. The ground of knowledge there is placed beyond experience. The ideas of Noumenon, Cause, and Unconditioned Existence, are the postulates from which the scheme of phenomena is developed. The constructions

of the mind are regarded as the models after which Nature works. The external order is sought by analysis of the internal order.

Now there is one science which has a delusive resemblance to this *à priori* evolution of results from abstractions, and in which the process is thoroughly legitimate, and because legitimate effective. It is Mathematics. Spinoza, with a consistency peculiar to himself, has therefore given his system a geometrical form. If the fundamental assumption of Metaphysics be warranted, Spinoza is right. If rigorous deductions from clear ideas be all that is necessary to assure us of truth, the evolution of the concrete universe from a few definitions and axioms is as valid as the evolution of mathematical results.

But there is this objection to geometrical metaphysics. Geometry is restricted to relations of magnitude. It deals with points, lines, and surfaces, which are capable of external verification; they are also unequivocal and unalterable:—under all varieties of conditions angles preserve their angular relations and their unalterable values. Having once defined a circle or an angle we may proceed in perfect confidence to draw out all the possible relations contained within those figures. Not so in Metaphysics. We have not there to unfold definitions, but to solve problems, and reach definitions by means of our solutions. We have not simple relations of magnitude to deal with, but complex relations of causality. The data are not simple and unequivocal, but complicated and obscure. We have to analyse these into their elements, and by unfolding the order of their arrangement unfold their causal nexus. We are no longer restricted to simple unchangeable relations of quantity, but have to take in the variable relations of quality. Our reliance on deduction is no longer justifiable; our definitions and axioms cease to be comprehensively true; and thus it is that Definitions which are guides in Mathematics are will-o'-wisps in Metaphysics.*

* On this point, see KANT: *Untersuchungen über die Deutlichkeit der Grundsätze der natürlichen Theologie und der Moral.*

It is enough if the definitions of Mathematics are clear, they have then all the adequacy they claim. So manifest is this, that ingenious mathematicians have constructed a Geometry on the hypothesis of space having *four* dimensions; and this Geometry is as perfect as that of Euclid. We cannot reproach them with leaving relations of quality untouched; they only pretend to embrace relations of quantity. But the definitions of Metaphysics must not only be clear, they must be adequate, comprehensive, exhaustive, for they claim to disclose the reality in its completeness, and the world in its causality.

Are the postulates of Metaphysics clear? Two thousand years of impotence prove their obscurity. Are they adequate? They claim to be; but Spinoza has, implicitly, denied this claim by assigning infinite attributes to existence, yet of these infinite attributes recognising only two as knowable—Thought and Extension. This difficulty he nowhere resolves. Yet surely there is a manifest contradiction in first postulating an infinity of attributes as the constituents of existence, and then proceeding to give an adequate explanation of existence by means of only two out of the infinite attributes? The mathematician may not argue thus:—‘Things have a great variety of aspects which together make up the activities of their nature; I can only tell you of their quantitative aspects, but from these you may recognise all their qualitative aspects. I can measure the angles of a salt, and only the angles; from these you may at once deduce its other properties, physical, chemical, and therapeutical. I can only measure the rapidity and sweep of the oscillations of ether; but from these you can deduce the thermal, optical, and chemical effects.’ The absurdity would be glaring. The absurdity if less glaring is as great which pretends to deduce from two attributes the infinite results of infinite attributes; or—quitting Spinoza for ordinary metaphysicians—to attempt from finite, relative knowledge a construction of the infinite and absolute.

M. Damiron, in a very able essay, denies that the geo-

metrical method can be applied to Metaphysics, because our intelligence cannot form notions so clear and necessary respecting substance, cause, time, good and evil, as respecting points, lines, and surfaces; and whenever such clear notions have been attempted, it has only been by sacrificing something of the reality, by the consideration of one aspect to the exclusion of the other.* This is perfectly true if applied to metaphysicians in general; but is not wholly true as applied to Spinoza, whose notions of substance, cause, &c. are not less clear than his notions of lines and surfaces. Meanwhile let us ask, *why* can we not form notions of cause, substance, and the rest, equalling in certainty our notions of lines and surfaces? The answer to this question dooms Metaphysics to eternal uncertainty: It is because Geometry never quits the sphere of its quantitative relations that its axioms retain their necessary clearness, and its consequences their necessary truth. It begins with lines and surfaces, with lines and surfaces it ends; it is a purely formal and deductive science. Its truths, when objectively applied, include *no other elements* than those *originally* given; when from *ideal* lines and the relations of those lines we pass to *real* lines and relations, we are still strictly within the sphere of lines and their relations; and the mightiest geometry can tell us nothing whatever of any *other* property of substance; it is powerless before any relations except those of magnitudes. Although we find, as a matter of fact, that questions of quantity underlie questions of quality, so that mathematics thus becomes an organon of discovery, these results have to be sought in other ways, and have to be verified by other means. We have found that the rapidity and swing of oscillating media determine the differences in tone and colour. But no mathematician could have deduced a tone or a colour from the velocity and sweep of a vibration. Formal Logic does remain within the sphere of its original assumptions, and it rivals geometry in its exactness; but when Logic passes into Metaphysics, it unhappily starts from its subjective sphere,

* DAMIRON: *Mémoire sur Spinoza*, p. 19.

and passes to the objective, pretending to *include* in its circle far more than is given in the original subjective datum, pretending indeed to disclose the *whole nature* of Substance, Cause, Time, and Space, and not merely *certain relations among our ideas* of these. When, for example, Spinoza passes from his ideal distinction of cause and effect, as when he proves that God must act according to the laws of his own nature, yet without constraint, nothing determining him save his own perfection, it is evident that Spinoza believes the purely subjective definition which he has framed expresses the whole truth of objective reality; he pretends to *know* the nature of God, and to know it through the notions he has framed of cause and effect. To select another example, the fifth proposition, on which so much of Spinoza's system depends: 'It is impossible that there should be two or more Substances of the same nature, or of the same Attribute.' This is subjectively true: as true as a proposition in Euclid; that is to say, it contains no contradiction, it is perfectly coherent with the definitions of Substance and Attribute; but if we pass from *definition*, and look only at actual substances before us—say two minerals—we perceive the definition to be framed from ideas, and not founded on objective reality. The fact is that Substance, as he defines it, is altogether unknown to us; it is removed from all experience and all possible verification. The substances (existences) which we *can* know, do not accord with his proposition.

The mathematician deduces conclusions from abstractions, and these are found to correspond with objective fact to nearly the whole extent of what was originally assumed, namely the relations of magnitudes, and no further. The metaphysician deduces conclusions equally abstract, and it may be that some conclusions will apply to objective fact (as when it is said 'nothing can be and not be at the same moment'), but the moment he speaks of Cause, Time, Space, and Substance, his ideas are necessarily indistinct, because he cannot know these as *things*; he can only frame inferences respecting them, and these inferences at every step need *verification*.

This the metaphysician will deny. He believes in the validity of Reason. He maintains the perfect competence of human intellect to know Cause, Time, Space, and Substance; but he has not the same clear argument Spinoza had, on which to ground this belief. And here we are face to face with the radical assumption which constitutes the initial error and logical perfection of Spinoza's system. He holds and expressly teaches that the *subjective idea* is the actual image or complete expression of the *objective fact*. 'Hoc est, id quod in intellectu objectivè continetur debet necessario in naturâ dari.' The order and connection of ideas is precisely the order and connection of things. In the Scholium to Prop. VIII. we have seen him maintaining that the correct definition of a thing expresses the nature of the thing, and nothing but its nature; which is true in one sense; for unless it express the nature of the thing, the definition must be incorrect; but false in another and more important sense; for every definition we can frame only expresses *our* conceptions of the nature of the thing: and thus we may define the nature of the inhabitants of the moon, and adhere to our definitions with the utmost logical rigour, yet all the while be utterly removed from any real knowledge of those inhabitants. The position is logically deducible from Spinoza's conception of the relation between Thought and Extension as the two Attributes of Substance; but it is a position which is emphatically contradicted by all sound Psychology. Nevertheless without it Metaphysics has no basis. Unless clear ideas are to be accepted as the truths of things, and unless every *idea*, which is distinctly conceived by the mind, has its *ideate*, or *object*—metaphysicians are without a fulcrum.

Having thus signalized the fundamental position of Spinoza's doctrine, it is there, if anywhere, that we shall be able to show his fundamental error. On the truth or falsehood of this one assumption must Spinozism stand or fall. Those who agree with us may escape Spinozism; but they escape it by denying the possibility of Ontology.

This consideration, that the mind is not a passive mirror

reflecting the nature of things, but the partial creator of its own forms—that in perception there is nothing but certain changes in the percipient—this consideration, we say, is the destruction of the very basis of metaphysics, for it expressly teaches that the subjective idea is *not* the correlate of the objective existence; yet only upon the belief that our ideas are the perfect and adequate images of external things can metaphysical speculation rest. Misled by the nature of geometry, which draws its truths from the mind as the spider draws the web from its bosom, Descartes assumed that metaphysical truths could be attained in the same way. Spinoza had read Bacon's denouncement of this *à priori* Method, though evidently unprepared to see the truth of the protest. It is curious to read his criticism of Bacon: he looks on it as that writer's great error to have mistaken the knowledge of the first cause and origin of things. 'On the nature of mind,' he says, 'Bacon speaks very confusedly; and while he proves nothing, judges much. For in the first place he supposes that the human intellect, besides the deceptions of the senses, is subject to the deceptions of its own nature, and that it conceives everything according to the analogies of its own nature, and not according to the analogies of the universe; so that it is like an unequal mirror to the rays of things, which mixes the conditions of its own nature with those of external things.'*

Spinoza's aberration is remarkable because he had also seen that in some sense the subjective was not the absolute expression of the objective; as is proved by his celebrated argument for the destruction of final causes, wherein he showed that *order* was a thing of the imagination, as were also right and wrong, useful and hurtful—these being merely such in relation to *us*. Still more striking is his anticipation of Kant in this passage:—'Ex quibus clarè

* 'Nam primò supponit quod intellectus humanus, præter fallaciam sensuum, suâ solâ naturâ fallitur, omniaque fingit ex analogiâ suæ naturæ, et non ex analogiâ universi; adeò ut sit instar speculi inæqualis ad radia rerum, qui suam naturam naturæ rerum immiscet.'—*Epist.* ii. *Opera Posthuma*, p. 398.

videre est, mensuram, tempus, et numerum, nihil esse præter cogitandi, seu potiùs imaginandi modòs ;' which should have led him to suspect that the same law of mental forms was also applicable to all other subjects.

Spinoza not only proceeds on the supposition that clear ideas are objective truths, but that they carry with them a supreme certainty ; they are the formal essences of the objects and require no verification. Hence his conclusion that since every idea must be adequate to the formal essence of its object, being in short the obverse of it, the mind must, in order to follow Nature's example, deduce all its ideas from that one which reproduces the origin and source of nature, so that it may be also the source of all other ideas.*

Clear ideas are distinguished from confused ideas: the second are products of fortuitous bodily movement, the first of pure reason: 'ex pura mente, et non ex fortuitis motibus corporis factæ sint.' And to reduce all these clear ideas under one, we must so arrange them that our mind objectively reproduces that which is formally objective in nature.

Yet he warns us against mistaking abstractions for realities, and Bacon would have applauded what is said about guarding ourselves against confounding what is only in our own minds with what is in things: 'et magnopere cavebimus ne misceamus ea quæ tantum sunt in intellectu cum iis quæ sunt in re.' This is, indeed, the danger of philosophy. We avoid it by Verification, which proves the correspondence between object and idea.†

Also in respect of Definitions his warning is raised. 'A definition should explain the intimate essence of a thing, and we must be on our guard lest we substitute a particular property for this essence. If, for example, a circle be defined as a figure in which all the lines from the centre to the circum-

* 'Porro ex hoc ultimo, quod diximus, scilicet quod idea omnino cum sua essentia formali debeat convenire, patet iterum, ex eo quod, ut mens nostra omnino referat naturæ exemplar, debeat omnes suas ideas producere ab ea quæ refert originem et fontem totius naturæ ut ipsa etiam sit fons ceterarum idearum.'—*De Intell. Emend.* 42.

† On this point compare our *Prolegomena*, ii. § 15.

ference are equal, every one sees that this definition in no way explains the essence of a circle but only one of its properties: and although, as I said, this matters little in reference to figures and other *entia rationis*, it is important in reference to real and physical things, because their properties cannot be understood so long as their essence is unknown. If we leave essences out of sight, the necessary concatenation of ideas which should reproduce the concatenation of objects is destroyed.*

In arranging our perceptions systematically, he says, we must ascertain first if there is some being which is the cause of all things, and what that being is, so that its objective essence will be also the cause of our ideas, and thus our minds reproduce the order of nature, its essence and union. And this course he follows in the construction of his system. It is the purely ontological process. Had he approached from the psychological side, and first thoroughly investigated the conditions and limits of human knowledge, he would have seen the initial mistake of his Method. Indeed an extension of his own principles might have opened to him a vista of his error. He laid down the canons of truth and error. All inadequate ideas he says are erroneous, and only these. The mind has a variety of such ideas—inadequate, confused, truncated—the origin of which is vague experience, imagination, opinion, as distinguished from reason. The ideas of reason are clear and adequate. It may startle the reader to find among the inadequate confused ideas specified by Spinoza, some which are the peculiar objects of metaphysics, namely Being, Thing, Freedom, and general ideas such as Man, Animal, &c. These are nothing but abstractions arising from the infirmity of thought. We cannot at once embrace many elements of a conception. We cannot hold many particulars steadily and clearly before the mind. Drooping under their weight, and dazzled by their multiplicity, the mind slips away, carrying with it (by abstraction) some one confused general character, in which the particular

* *De Intell. Emend.* 95.

details are more or less merged. Imagining objects in extreme confusion we resume them under one predicate such as Being, Thing, Genus. Thus all images of particular men or particular horses are confusedly blended in the abstraction Man or Horse. Thus transcendental ideas are formed. They are *notiones universales*, and as such are necessarily obscure, inadequate, ergo erroneous. What wonder then that these notions have been fruitful of controversy, since each man represents the object by that sign which most interests him, and thus the variety of ideas calling themselves universal has been proportionate to the variety of interests. Freedom is an example. It is founded on the supposition of some general Will, or absolute faculty of determining this or that act, i.e. an abstraction from particular acts of volition, as Man is from individual men. The real will is desire, and every act of desire has its special cause, which it necessarily follows as effect. If we abstract from all these particular acts a naked undetermined Will, a Will that is uncaused, it is something removed from reality, 'ens imaginationis,' having no more objective existence than the *lapidity* of stone, the *aureity* of gold, the *animality* of lions and tigers.

If we reject as abstractions, fictions of our infirm thought, such notions as those of *ens*, *aliquid*, freedom, final cause, &c., how can Spinoza ask us to accept his notions of God, Cause, and Substance, as if these also were not abstractions similarly constructed? Are they clearer? Are they more real? Yes, he replies. These are marked out as *notiones communes*, and their validity is seen in their being common to all experience. The *notio communis* is an expression of real existence, because it expresses that which is found common to every individual thing. Our knowledge of things, indeed, is partial, and in so far inadequate; but, if throughout this partial knowledge there runs one common character, we may be sure that this common character expresses a common truth.* There are notions common to all minds; these must be true.

* *Ethica*, ii. prop. xxxvii.-xxxviii.

The objection will certainly arise that what are called *notiones universales* — the conceptions Thing, Something, Freedom, Virtue, Animal, Man, &c.—are quite as common to all minds as the *notiones communes*, God, Substance, and Cause. Why then is the one class to be rejected as vague error, and the other accepted as irresistible truth? Spinoza's answer would be that the criterion of truth is clearness and distinctness. A geometrical fallacy. 'He who has a true idea not only knows that he has it but is unable to doubt its truth.' A psychological fallacy. Let us follow his demonstrations of it:

'A true idea in us is that which is adequate in God, in so far as he is manifested by the nature of the human mind (by coroll. prop. xi. part ii.). Let us, therefore, suppose that there is in God, so far as he is manifested by the human mind, an adequate idea A. There must be also in God the idea of this idea, which is related to God in the same way as idea A (acc. to prop xx. the demonstration of which is universal). But the idea A is supposed to belong to God in so far as he is manifested by the human mind; therefore, also the idea of this idea must belong to God in the same way, i. e. this adequate idea of the idea A will be in the same mind which has the adequate idea A; and thus he who has an adequate idea or (by prop. xxxiv. part ii.) who truly knows a thing, must at the same time have an adequate idea or true cognition of his cognition, i. e. (as is self-evident) he must at the same time have certitude: Q. E. D.

'*Schol.* In scholium prop. xxi. I have explained what is the idea of an idea. But it is to be noted that the preceding proposition is sufficiently evident by itself. For no one who has a true idea is ignorant that a true idea involves the highest certitude. To have a true idea signifies nothing else than to know a thing perfectly; nor, indeed, can any one doubt this unless he supposes an idea to be a mute image, like a picture, and not a mode of thought. And I ask who can *know* that he understands a thing unless he first understands it, i. e. who can *know* that he is certain of a thing unless he be first certain of it? Further, what can be clearer

and more certain than a true idea, so as to be a criterion of its truth? As light manifests both itself and darkness, so truth is the criterion of itself and of falsehood. And hereby I believe myself to have answered the following objections: namely, if a true idea is distinguished from a false idea only in so far as it is said to agree with its object, a true idea has no more reality or perfection than a false idea (since they are distinguished solely by an extrinsic mark), and consequently the man who has true ideas would have no more of reality or perfection than he who has false ideas. Further, whence comes it that men have false ideas? And lastly, whence can one certainly know that he has ideas which agree with their objects? . . . Add to this that our mind, in so far as it truly perceives things, is a part of the infinite intellect of God, and thus it is as necessary that clear and distinct ideas of mind are true as that the ideas of God are true.'

A metaphysician may be satisfied with the criterion of inward conviction, and the character of clearness. Positive philosophers may be permitted to decline such a criterion. They cannot accept subjective distinctions as equivalent to objective discrimination, logical analysis as equivalent to physical analysis, *une manière de voir* as a method of search. They deny the validity of a method which begins by assuming the conclusions at which it is to arrive. If we can ever solve the problems of the invisible and unknown, we must be led up to them through the avenues of the visible and known. Physics must form the prolegomena to Metaphysics. Psychology will teach us to relinquish all vain efforts to transcend our faculties, and no longer waste valuable time in ontological research.

I must not pursue this topic. Enough has been said, perhaps, to indicate what I consider the strength and the weakness of Spinozism. Its strength lies in its consistency. If clear thoughts are adequate and accurate representations of things, if Thought itself is the correlate of Extension, Mind the obverse of Matter, coextensive and cointensive, and human intellect a mode of God's infinite attribute;

then, indeed, all the movements of matter will be paralleled by movements of mind, the external order will be identical with the internal order, and whatever we find in the intellect may be concluded to exist in the external world; subjective logic being, as Hegel boldly affirms, identical with objective reality. That is the foundation of Spinozism. We must ask for no proof of so momentous a position. It is antecedent to all proof. To deny it is to deny philosophy. 'With Method,' Spinoza says,* 'it is as with other instruments. Forging iron is only possible when we have a hammer; but to have the hammer we must forge it, which presupposes another instrument, and so on *ad infinitum*. It would be vain to attempt to prove by such reasoning that man had no power to forge iron. In the beginning men used the instruments furnished by nature and with them made a few imperfect things, then other things better and with more ease, and thus gradually perfecting both their works and their instruments they have come to perform wonderful things with little difficulty. In the same way the human understanding in virtue of the power which is in it fashions its intellectual instruments, by means of which it acquires new forces, and so on gradually fortifying itself it advances till supreme wisdom is attained. There exists in us a true idea which resembles an instrument, and which while it is comprehended by the mind, enables us to comprehend the difference which exists between the idea itself and every other perception.'

If no proof is offered of the fundamental position, rigorous proof is offered of all that is evolved from it. Once admit that all clear and distinct ideas are necessarily adequate expressions of objects, and the mathematical deduction proceeds undisturbed. One might indeed advance another system on a similar basis, having equal validity and opposite conclusions. For example, Spinoza generates Motion out of Extension. It would be easier to generate Extension out of

* *De Intellect. Emend.* 30.

Motion; or if not easier, the mere possibility of doing it is enough for my purpose. Again, Spinoza makes Thought the infinite attribute of Substance; thereby giving a soul both to animate and inanimate objects. But with equal or greater validity Thought may be conceived as no general attribute at all, only a special mode of the general attribute of Force. One idea is as clear as the other; which is true? It is because Metaphysics is without a criterion that systems spring up like mushrooms and like mushrooms disappear. The contest is interminable, because no conclusions are verifiable.

Finally we may point to Spinozism as the legitimate result of that Subjective Method which Descartes, in spite of his insurgence against Scholasticism, had restored to its ancient place. In vain were metaphysical entities and metaphysical theories banished; their parent, the metaphysical Method, was retained. That process of deduction which, as in Mathematics, from a few axioms constructed a whole universe, could only have been legitimised by an initial verification of the principles and a successive verification of the conclusions. This was not attempted, and could not have been effected, since the premisses and the conclusions embrace objects inaccessible to human powers.

There are other points which might profitably be discussed did our limits admit of it; but enough has been said to show the main direction of Spinoza's speculations and their historical position, as the development of that Method which Descartes had systematized. The application of the Method to cosmical phenomena in the hands of Descartes and his followers, rapidly disclosed its essential unfitness for research; the application to ontological problems, in the hands of Spinoza, led to results so startling and so abhorrent to the general mind, that it called attention to the grounds upon which such conclusions could be based. As I said before, there were no Spinozists to carry on the work of their master. The followers of Descartes were quickly silenced by the followers of Newton. Only in Meta-

physics could they find a field, and there to this day Descartes is regarded as a master. In the same region Spinoza is also regarded as a master: no one avowedly adopts Spinozism, but German Ontology is thoroughly penetrated by it.*

* The works on Spinoza are abundant. The best expositions of his doctrine I have seen are in KUNO FISCHER: *Gesch. der neuern Philos.*, Bd. I., and SIGWART: *Der Spinozismus historisch und philos. erläutert*. An English translation of the 'Ethics' and 'Correspondence' by Dr. R. WILLIS has recently appeared. An anonymous translation of the 'Tractatus' had previously been published. There are also complete translations, in German by AUERBACH, and in French by ÉMILE SAISSET.

CHAPTER II.

THE FIRST CRISIS IN MODERN PHILOSOPHY.

SPINOZA'S development of the germs sent forth by Descartes, produced a crisis. He startled men by the conclusions to which he showed that their philosophical premisses irresistibly led; and thus forced them into the dilemma either of rejecting the premisses, or rejecting the validity of Philosophy as then conceived.

If the premisses are correct, if every clear, distinct idea is necessarily true, subjective logic is a key to the mystery of the objective world; the internal order is identical with the external order; and Spinozism is an acceptable creed.

If the premisses are not correct, if the voice of Consciousness is not necessarily the voice of truth, the subjective not always the harmonious correlate of the objective, Metaphysical Philosophy, which has its basis in this certitude of Consciousness, is impotent.

Spinozism or Scepticism? There seemed no third alternative. Nor was there a third alternative, so long as Philosophy persisted in its ontological and absolute claims—persisted in the metaphysical Method, in the search for truths lying beyond the sphere of relativity. A new conception of Philosophy was needed to restore the shattered confidence of philosophers.

This new conception was then slowly growing into the distinctness it has of late assumed. It involved a complete change in the point of view. The relativity of all knowledge was its primary canon. With this necessarily came a complete exclusion of ontological research. The nature and limits of Knowledge became the most urgent topics. Before

deciding upon any question relating to Creation, Immortality, or Cause, men saw themselves compelled to decide upon the competence of human faculty to acquire any knowledge whatever of such subjects. If this inquiry should result in disclosing a native incompetence, there would be an end to all disputes on topics thus removed from rational research.

The crisis, therefore, turns upon this fundamental dispute: Can the human mind transcend the sphere of relative knowledge, and, passing from Consciousness to Causes, explore the nature of things *per se*?

The first decomposition of this great question is into the psychological question of the origin of ideas: *Have we or have we not any ideas which are antecedent to, and independent of, Experience?*

The recognition of this question as the primary one, constitutes a new era in History. Several writers have remarked the enormous predominance of psychological inquiries from Spinoza to Fichte; but the reason of this turn in the direction of Philosophy has not, I think, been recognised. The fact is patent; the connection of the predominance of Psychology with the necessary decrease of Ontology required explanation; the more so as Psychology occupied but little attention in the ancient and mediæval schools. I believe that the importance acquired by Psychology, especially in its treatment of the origin and scope of human faculty, was the natural result of the same objective tendency which had given prominence to the Inductive Method. A necessity had arisen for a new course of investigation. The hopeless failures of so many generations suggested that the seekers had begun their search at the wrong end; and that before any issue could be found, a complete revision of the means of search was indispensable. The limits and conditions of the inquiring mind had to be ascertained.

THIRD EPOCH.

Philosophy pauses to ascertain the scope and limits of the human mind.

CHAPTER I.

HOBBS.

PERHAPS no writer except Spinoza has ever been so uniformly depreciated as Hobbes. From his first appearance until the present day his name has been a bye-word of contempt with the majority of writers; and even by those who have been liberal enough to acknowledge merit in an adversary, he has been treated as a dangerous and shallow thinker. The first person who saw his importance as a political thinker, and had the courage to proclaim it, was James Mill. As long as political and social theories continue to be judged of by their *supposed* consequences, so long will Hobbes be denied a fair hearing. He has roused the *odium theologicum*. It will be long ere that will be appeased.

Faults he had, unquestionably; short-comings, incomplete views; and—as all error is dangerous in proportion to its plausibility—we will say that he was guilty of dangerous errors. Let the faults be noted, but not overstrained; let the short-comings and incomplete views be enlarged and corrected; the errors calmly examined and refuted. We shall be gainers by it; but by inconsiderate contempt, or by vilifying, no good result can be obtained. Impartial minds will rank Hobbes amongst the greatest writers England has produced. He is profound, and he is clear; weighty, strong, and sparkling. His style, as mere style, is in its way as fine as any-

thing in English: it has the clearness as well as the solidity and brilliancy of crystal. Nor is the matter unworthy of the form. It is original, in the sense of having been passed through the alembic of his own brain, even when formerly the property of others. Although little of it would now appear novel, it was novel when he produced it. Haughty, dogmatic, overbearing in manner, he yet loved Truth, and never hesitated to proclaim it. 'Harm I can do none,' he says, in the opening of the *Leviathan*, 'though I hear no less than they (i.e. previous writers), for I shall leave men but as they are in doubt and dispute; but intending not to take any principle upon *trust*, but only to put men in mind of what *they know already*, or may know by their experience, I hope to err less; and when I do, it must proceed from *too hasty concluding*, which I will endeavour as much as I can to avoid.' *

He proclaimed that Psychology is a science of observation; that if we would understand the conditions and operations of our minds, we must patiently look inwards and see what passes there. All the reasoning and subtle disputation in the world will not advance us one step, unless we first get a firm basis on fact. 'Man,' he says elsewhere, with his usual causticity, 'has the exclusive privilege of forming general theorems. But this privilege is alloyed by another, that is, by the privilege of absurdity, to which no living creature is subject but man only. And of men those are of all most subject to it, that profess Philosophy.' And the cause of this large endowment of the privilege to philosophers we may read in another passage, where he attributes the difficulty men have in receiving Truth, to their minds being prepossessed by false opinions—they having *prejudged* the question. The passage is as follows:—'When men have once acquiesced in untrue opinions, and registered them as authenticated records in their minds, it is no less impossible to speak intelligibly to such men than to write legibly on a paper already scribbled over.'

Hobbes's position in the History of Philosophy is easily

* *Works*, edited by Sir W. MOLESWORTH, iv. 1.

assigned. On the question of the origin of our knowledge he takes a decided stand upon Experience: he is the precursor of modern sensationalists:—

‘Concerning the thoughts of man I will consider them first singly, and afterwards in a train or dependence upon one another. Singly they are every one a *representation* or *appearance* of some quality or other accident of a body without us, which is commonly called an *object*. Which object worketh on the eyes, ears, and other parts of a man’s body; and by diversity of working, produceth diversity of appearances.

‘The original of them all is that which we call *Sense*, for there is no conception in a man’s mind which hath not at first, totally or by parts, been begotten upon the organs of sense. The rest are derived from that original.’*

Here is stated, in the broadest manner, the principle of sensationalism. It is in direct antagonism to the doctrine of Descartes that there are innate ideas; in direct antagonism to the old doctrine of the spirituality of Mind. Theoretically this principle may be insignificant: historically it is important.

Hobbes’s language is plain enough, but we will still further quote from him, to obviate any doubt as to his meaning.

‘According to the two principal parts of man, I divide his faculties into two sorts—faculties of the *body*, and faculties of the *mind*.

‘Since the minute and distinct anatomy of the powers of the body is nothing necessary to the present purpose, I will only sum them up in these three heads,—power *nutritive*, power *generative*, and power *motive*.

‘Of the powers of the mind there be two sorts—*cognitive*, *imaginative*, or *conceptive* and *motive*.

‘For the understanding of what I mean by the power *cognitive*, we must remember and acknowledge that there be in our minds continually certain *images* or conceptions of the things without us. This *imagery* and *representation* of

* *Leviathan*, ch. i. In the following exposition we shall sometimes cite from the *Leviathan* and sometimes from the *Human Nature*.

the qualities of the things without, is that which we call our *conception, imagination, ideas, notice*, or knowledge of them; and the *faculty*, or power by which we are capable of such knowledge, is that I here call *cognitive power*, or *conceptive*, the power of knowing or conceiving.'

The mind is thus wholly constructed out of sense. Nor must we be deceived by the words *faculty* and *power*, as if they meant any activity of the mind—as if they implied that the mind *co-operated* with sense. The last sentence of the foregoing passage is sufficient to clear up this point. He elsewhere says:—'All the qualities called *sensible* are, in the object that causeth them, but so many several *motions* of the matter by which it presseth on our organs diversely. *Neither in us that are pressed are they anything else but divers motions; for motion produceth nothing but motion.*'

Hobbes, therefore, and not Locke, is the precursor of that school of Psychology which flourished in the eighteenth century (principally in France), and which made every operation of the mind proceed out of transformed sensations; which ended, logically enough, in saying that to *think* is to *feel*—*penser c'est sentir*.

It is to Hobbes that the merit is due of a discovery which, though so familiar to us now as to appear self-evident, was yet in truth a most important discovery, and was adopted by Descartes in his *Meditations**—it is that our sensations do not correspond with any external qualities; that what are called sensible qualities are nothing but modifications of the sentient being:—

'Because the image in vision, consisting of colour and shape, is the knowledge we have of the qualities of the object of that sense; it is no hard matter for a man to fall into this opinion that the same colour and shape are the very qualities themselves; and for the same cause that sound and noise are the qualities of the bell or of the air. And this

* DESCARTES may possibly have discovered it for himself; but the priority of publication is at any rate due to HOBBS—a fact first noticed, we believe, by Mr. HALLAM: *Literature of Europe*, iii. 271.

opinion hath been so long received that the contrary must needs appear a great paradox ; and yet the introduction of *species visible* and *intelligible* (which is necessary for the maintenance of that opinion) passing to and fro from the object is worse than any paradox, as being a plain impossibility. I shall therefore endeavour to make plain these points :

‘ That the subject wherein colour and image are inherent, is not the object or thing seen.

‘ That there is nothing without us (really) which we call an image or colour.

‘ That the said image or colour is but an apparition unto us of *the motion, agitation, or alteration, which the object worketh in the brain, or spirits, or some internal substance of the head.*

‘ That as in vision, so also in conceptions that arise from the other senses, the subject of their inference is not the object but the sentient.’

This important principle, which Carneades among the ancients alone seems to have suspected, Hobbes has very clearly and conclusively illustrated.

Sense furnishes us with conceptions ; but as there are other operations of the mind besides the conceptive, it remains to be seen how sense can also be the original of them.

And first, of *Imagination*. Mr. Hallam has noticed the acuteness and originality which often characterise Hobbes’s remarks ; and he instances the opening of the chapter on Imagination in the *Leviathan*. It is worth quoting :—‘ That when a thing lies still, unless somewhat else stir it, it will lie still for ever, is a truth no one doubts of. But that when a thing is in motion it will eternally be in motion, unless somewhat else stay it, though the reason be the same, namely that nothing can change itself, is not so easily assented to. For men measure not only other men but all other things by themselves ; and because they find themselves subject after motion to pain and lassitude, think everything else grows weary of motion and seeks repose of its own accord ; little considering whether it be not some

other motion wherein that desire of rest, they find in themselves, consisteth.' Imagination Hobbes defines as a 'conception remaining and by little and little decaying from and after the act of sense.' . . . 'Imagination, therefore, is but *decaying sense*.' The reader must not here understand by imagination anything more than the retaining of an *image* of the object, after the object is removed. It is the term used by Hobbes to express what James Mill happily called *Ideation*. Sense, Sensation; ideas, Ideation. Hobbes says, sense, Sensation; images, Imagination.

The materialism of Hobbes does not consist merely in his language (as is the case with some philosophers; Locke, for instance); it lies at the very root of his theory. Thus, he says, we have sensations and we have images—ideas. Whence those images? 'When a body is once in motion it moveth, unless something hinder it, eternally; and whatsoever hindereth it, cannot in an instant, but in time and by degrees quite extinguish it; and as we see in the water, though the wind cease, the waves give not over rolling for a long time after: so also it happeneth in that *motion* which is made in the internal parts of man; then, when he sees, dreams, &c. For after the object is removed, or the eye shut, we still retain an image of the thing seen, though more obscure than when we see it. . . . The decay of sense in men waking is not the decay of the motion made in sense, but an obscuring of it, in such manner as the light of the sun obscureth the light of the stars; which stars do no less exercise their virtue, by which they are visible, in the day than in the night. But because amongst many strokes which our eyes, ears, and other organs receive from external bodies, the predominant only is sensible; therefore the light of the sun being predominant, we are not affected with the action of the stars.' This illustration is very happy; but it only serves to bring out into stronger relief the materialism. He has told us what Imagination is; let us now learn what is Memory. 'This decaying sense, when we would express the thing itself, I mean *fancy* itself, we call *imagination*, as

I have said before; but when we would express the decay, and signify that the sense is fading, old, and past, it is called *memory*. So that imagination and memory are but one thing, which for divers considerations hath divers names.' Mr. Hallam objects to this, and says that it is very evident that imagination and memory are distinguished by something more than their names. Truly, by us; but not by Hobbes: he evidently uses the word imagination in a more generical sense than we use it: he means by it Ideation. Thus he calls dreams 'the imagination of them that sleep.' It is that state of the mind which remains when the objects which agitated it by sensations are removed: the mind is then not so agitated but neither is it calm; and he compares that state to the gentle rolling of the waves after the wind hath ceased.

Let this be distinctly borne in mind: Hobbes sees nothing in the intellect but what was previously in the sense. Sensations, and the traces which they leave (i. e. images), form the simple elements of all knowledge; the various commixtures of these elements form the various intellectual faculties. Open the third chapter of the *Leviathan*. In it he propounded, as something quite simple and obvious, the very important law of association of ideas.* He states it with great clearness and thorough mastery, though he evidently was quite unaware of its extensive application.

'When a man thinketh,' he says, 'on anything whatsoever, his next thought after is not altogether so casual as it seems to be. Not every thought to every thought succeeds indifferently. But as we have no imagination whereof we have not formerly had sense in whole or in parts, so we have no transition from one imagination to another whereof we never had the like before in our senses. The reason whereof is this: all fancies (i. e. images) are *motions within us, relicts of those made in sense*; and those motions that immediately succeed one another in the sense continue also together after the sense; insomuch as the former coming again to take place

* See Sir W. HAMILTON: *Dissertation* affixed to *Reid's Works*, p. 898, for a history of this law of association.

and be predominant, the latter followeth by coherence of the matter moved, in such manner as water upon a plain table is drawn which way any one part of it is guided by the finger.'

The materialism here is distinct enough. He continues, in excellent style:—'This train of thoughts, or mental discourse, is of two sorts. The first is unguided, without design, and inconstant, wherein there is no passionate thought to govern and direct those that follow to itself, as the end and scope of some desire or other passion; in which case the thoughts are said to wander, and seem impertinent one to another as in a dream. Such are commonly the thoughts of men that are not only without company, but also without care of anything; though even then their thoughts are as busy as at other times, but without harmony; as the sound which a lute out of tune would yield to any man; or in tune, to one that could not play. And yet in this wild ranging of the mind, a man may oftentimes perceive the way of it, and the dependence of one thought upon another. For in a discourse of our present civil war, what would seem more impertinent than to ask, as one did, what was the value of a Roman penny? Yet the coherence to me was manifest enough. For the thought of the war introduced the thought of delivering up the King to his enemies; the thought of that brought in the thought of the delivering up of Christ; and that again the thought of the thirty pence, which was the price of that treason; and thence easily followed that malicious question, and all this in a moment of time; for thought is quick.'

'For thought is quick.' This is the simple pregnant comment, justly deemed sufficient. The plain direct remark with which Hobbes concludes the above passage would, in the hands of many moderns, have run somewhat thus:—'How wonderful is thought! how mighty! how mysterious! In its lightning speed it traverses all space, and makes the past present!' Hobbes, with a few simple direct words, produces a greater impression than would all the swelling pomp of a passage bristling with notes of exclamation. This is the secret of his style. It is also the characteristic

of his speculations. Whatever faults they may have, they have no vagueness, no pretended profundity. As much of the truth as he has clearly seen he clearly exhibits: what he has not seen he does not pretend to see.

One important deduction from his principles he has drawn:

‘Whatsoever we imagine is *finite*. Therefore there is no idea, no conception of anything we call *infinite*. No man can have in his mind an image of infinite magnitude, nor conceive infinite swiftness, infinite time, or infinite power. When we say that anything is infinite, we signify only that we are not able to conceive the ends and bounds of the thing named, having no conception of the thing, but of our own inability. And therefore the name of God is used not to make us conceive him, for he is incomprehensible, and his greatness and power are inconceivable, but that we may honour him. Also because whatsoever we conceive has been perceived first by sense, either all at once or by parts, *a man can have no thought representing anything not subject to Sense.*’

On Hobbes’s principles this is irresistible. He assumes that all our *thoughts* must be *images*. So far is this from being true, that not even all our *sensations* are capable of forming images. What images are given by the sensations of heat or cold, of music, or of taste?

Every man’s consciousness will assure him that thoughts are not always images. It will also assure him that he has the idea, notion, conception, figment (or whatever name he may give the thought) of Infinity. If he attempts to form an image of it, that image will of course be finite: it would not otherwise be an image. But he can think of it; he can reason of it. It is a *thought*. It is in his mind; though how it got there may be a question which he is not in a condition to answer.

We insist upon Hobbes’s materialism, the better to prepare the reader for a correct appreciation of Locke. Hobbes, in the sixth chapter of his *Human Nature*, has very carefully defined what he means by knowledge. ‘There is a story somewhere,’ he says, ‘of one that pretends to have been miraculously cured of blindness, wherewith he was born, by

St. Alban or other saints, at the town of St. Alban's; and that the Duke of Gloucester being there, to be satisfied of the truth of the miracle, asked the man, What colour is this? who, by answering it was green, discovered himself, and was punished for a counterfeit: for though by his sight newly received he might distinguish between green and red and all other colours, as well as any that should interrogate him, yet he could not possibly know at first sight which of them was called green, or red, or by any other name.

'By this we may understand there be *two kinds* of knowledge, whereof the one is nothing else but *sense*, or knowledge *original*, and *remembrance* of the same; the other is called *science*, or knowledge of the *truth*, of *propositions*, and how things are called, and is derived from *understanding*. Both of these sorts are but *experience*; the former being the experience of the effects of things that work upon us from *without*; and the latter experience men have from the proper use of *names* in language: and all experience being, as I have said, but remembrance, all knowledge is remembrance.'

The only ambiguity possible in the above passage is that which might arise from the use of the word *understanding*. This he elsewhere defines as follows:—

'When a man upon the hearing of any speech hath those thoughts which the words of that speech in their connection were ordained and constituted to signify, then he is said to understand it; *understanding* being nothing else but conception formed by speech.'

We must content ourselves with merely alluding to his admirable observations on language, and with quoting, for the hundredth time, his weighty aphorism, 'Words are wise men's counters; they do but reckon by them; but they are the money of fools.'

No attempt is here made to do full justice to Hobbes; no notice can be taken of the speculations which made him famous. Our object has been fulfilled if we have made clear to the reader the position Hobbes occupies in modern psychological speculation.

CHAPTER II.

LOCKE.

§ I. LIFE OF LOCKE.

JOHN LOCKE, one of the wisest of Englishmen, was born at Wrington, in Somersetshire, on August 29, 1632. Little is known of his family, except that his father had served in the parliamentary wars: a fact not without significance in connection with the steady love of liberty manifested by the son.

His education began at Westminster, where he stayed till he was nineteen or twenty. He was then sent to Oxford. That University was distinguished then, as it has ever been, by its attachment to whatever is old: the Past is its model; the Past has its affection. That there is much good in this veneration for the Past, few will gainsay. Nevertheless, a University which piqued itself on being behind the age, was scarcely the fit place for an original thinker. Locke was ill at ease in a place where the Philosophy upheld was Scholasticism. On such food a mind like his could not nourish itself. Like his great predecessor Bacon, he imbibed a profound contempt for the University studies; and in after-life regretted that so much of his time should have been wasted on such profitless pursuits. So deeply convinced was he of the vicious method of college education, that he ran into the other extreme, and thought self-education the best. It is true that all great men have been mainly self-taught; all that is most valuable a man must learn for himself, must work out for himself. Locke assumes that all men *will* educate themselves if left to themselves. The fact is, the majority have to be edu-

cated by force. For those who, if left to themselves, would never educate themselves, colleges and schools are indispensable.

Locke's notion of an educated man is very characteristic of him. Writing to Lord Peterborough, he says, 'Your Lordship would have your son's tutor a thorough scholar, and I think it not much matter whether he be any scholar or no; if he but understand Latin well and have a general scheme of the sciences, I think that enough. But I would have him well-bred and well-tempered.'

Disgusted with the disputes which usurped the title of Philosophy, Locke principally devoted himself to Medicine while at Oxford. His proficiency is attested by two very different persons, and in two very different ways. Dr. Sydenham, in the Dedication of his *Observations on the History and Cure of Acute Diseases*, boasts of the approbation bestowed on his Method by Mr. John Locke, 'who examined it to the bottom; and who, if we consider his genius and penetrating and exact judgment, has scarce any superior, and few equals now living.' The second testimony is that afforded by Lord Shaftesbury, when Locke first met him. The Earl was suffering from an abscess in the chest. No one could discover the nature of his disorder. Locke at once divined it. The Earl followed his advice, submitted to an operation, and was saved. A close intimacy sprang up between them. Locke accompanied him to London, and resided principally in his house.

His attention was thus turned to politics. His visits to Holland delighted him. 'The blessings which the people there enjoyed under a government peculiarly favourable to civil and religious liberty, amply compensated, in his view, for what their uninviting territory wanted in scenery and climate.'* He also visited France and Germany, making the acquaintance of several distinguished men.

In 1670 he planned his *Essay concerning Human Understanding*. This he did not complete till 1687. In 1675 the

* DUCALD STEWART.

delicate state of his health obliged him to travel, and he repaired to the South of France, where he met Lord Pembroke. To him the *Essay* is dedicated. He returned in 1679, and resumed his studies at Oxford. But his friendship for Shaftesbury, and the liberal opinions he was known to hold, drew upon him the displeasure of the Court. He was deprived of his studentship by a very arbitrary act.* Nor did persecution stop there. He was soon forced to quit England, and find refuge at the Hague. There also the anger of the king pursued him, and he was obliged to retreat further into Holland. It was there he published his celebrated *Letter on Toleration*.

He did not return to England till after the Revolution. Then there was security and welcome. He was pressed to accept a high diplomatic office in Germany, but the state of his health prevented him. In 1690 the first edition of his *Essay* appeared. He had indeed already (1688) published an abridgment of it in Leclerc's *Bibliothèque universelle*. The success of this *Essay* was immense; and Warburton's assertion to the contrary falls to the ground on the mere statement of the number of editions which the work rapidly went through. Six editions within fourteen years,† and in times when books sold more slowly than they sell now, is evidence enough.

The publication of his *Essay* roused great opposition. He soon got involved in the discussions with Stillingfleet, Bishop of Worcester. He was soon after engaged in the political discussions of the day, and published his *Treatise on Government*. It was about this time that he became

* MACAULAY: *History of England*, i. 515-6.

† The writer of the article *Locke*, in the *Encyclopædia Britannica*, says that the fourth edition appeared in 1700. VICTOR COUSIN repeats the statement, and adds that a fifth edition was preparing when death overtook the author; this fifth edition appearing in 1705. We know not on what authority these writers speak; but that they are in error may be seen by turning to LOCKE's *Epistle to the Reader*, the last paragraph of which announces that the edition then issued by Locke himself is the sixth.

acquainted with Sir Isaac Newton ; and a portion of their very interesting correspondence has been given by Lord King in his *Life of Locke*.

Locke's health, though always delicate, had not been disturbed by any imprudences, so that he reached the age of seventy-two—a good ripe age for one who had studied and thought. He expired in the arms of his friend Lady Masham, on October 28, 1704.

§ II. ON THE SPIRIT OF LOCKE'S WRITINGS.

It has for many years been the fashion to decry Locke. Indirect sneers at his 'superficiality' abound in the writings of those who, because their thought is so muddy that they cannot see its shallow bottom, fancy they are profound. Locke's 'materialism' is also a favourite subject of condolence with these writers, who also assert that his principles 'lead to atheism.'

Another mode of undervaluing Locke is to assert that he only borrowed and popularised the ideas originated by Hobbes. That Locke never read Hobbes may seem incredible, but has strong evidence to support it ; and is one among many examples of how few were the books he had read. He never alludes to Hobbes in any way that can be interpreted into having read him. Twice only, we believe, does he allude to him, and then so distantly, and with such impropriety, as to be almost convincing with respect to his ignorance. The first time is in his *Reply to the Bishop of Worcester*, in which he absurdly classes Hobbes and Spinoza together. He says, 'I am not so well read in Hobbes and Spinoza as to be able to say what were their opinions on this matter, but possibly there be those who will think your Lordship's authority of more use than *those justly-decried writers*.' The form of expression, 'I am not so well read,' etc. is obviously equivalent to—I have never read those justly-decried writers. His second allusion is simply this:—'A Hobbist would probably say.'

We cannot at present lay our hands on the passage, but it refers to some moral question.

This is only negative evidence. Something like positive evidence however is the fact that Hobbes's doctrine of Association of Ideas—a principle as simple of apprehension as it is important—was completely unknown to Locke, who, in the fourth or fifth edition, added the chapter on Association as it now stands. Moreover, Locke's statement of the law is by no means so satisfactory as that by Hobbes: he had not so thoroughly mastered it; yet, had he read it in Hobbes, he would assuredly have improved on it. That he did not at first introduce it into his work is a strong presumption that he had not then read Hobbes, because the law is so simple and so evident, when stated, that it must produce instantaneous conviction.

It is strange that any man should have read Locke, and questioned his originality. There is scarcely a writer we could name whose works bear such an indisputable impress of his having 'raised himself above the almsbasket, and, not content to live lazily on scraps of begged opinions, set his own thoughts to work to find and follow truth.' It is still more strange that any man should have read Locke and questioned his power. The patient sagacity which, above all things, distinguishes a philosopher is more remarkable in Locke than almost any writer. He was also largely endowed with good sense. In these two qualities, and in his homely racy masculine style, we see the type of the English mind, when at its best. The plain directness of his manner, his earnestness without fanaticism, his hearty honest life of truth, and the depth and pertinence of his thoughts, are qualities which, though they do not dazzle the reader, yet win his love and respect. In that volume, you have the honest thoughts of a great honest Englishman. It is the product of a manly mind: clear, truthful, direct. No vague formulas, no rhetorical flights, no base flattery of base prejudices, no assumption of oracular wisdom, no word-jugglery. There are so many writers who cover their inanity with a

veil of words, who seem profound because they are obscure, that a plainness like Locke's deceives the careless reader, and leads him to suppose that what is there so plain must have been obvious.

Locke, though a patient cautious thinker, was anything but a timid thinker; and it does great honour to his sagacity that at a time when all scientific men were exclaiming against the danger of hypothesis, believing that the extravagant errors of Schoolmen and alchemists were owing to their use of hypotheses—a time when the great Newton himself could be led into the unphilosophical boast, *hypotheses non fingo*, our wise Locke should exactly appreciate them at their true value. He says:—

‘Not that we may not, to explain any phenomena of nature, make use of any probable hypothesis whatsoever. Hypotheses, if they are well made, are at least great helps to memory, and often direct us to new discoveries. But we should not take them up too hastily (which the mind that would always penetrate into the causes of things, and have principles to rest on, is very apt to do) till we have very well examined particulars, and made several experiments in that thing which we would explain by our hypothesis, and see whether it will agree to them all; whether our principles will carry us quite through, and not be as inconsistent with one phenomenon of nature as they seem to accomodate and explain another; and, at least, that we take care that the name of principles deceive us not nor impose on us, by making us receive that for an unquestionable truth which is really at best but a very doubtful conjecture: such as are most (I had almost said all) of the hypotheses in natural philosophy.’

Locke could exchange his opinions with ease when he fancied that he saw their error. He readily retracted ideas which he had published in an immature form; ‘thinking himself,’ as he says, ‘more concerned to quit and renounce any opinion of my own than oppose that of another, when truth appears against it.’ He had a just and incurable suspicion of all ‘great volumes swollen with ambiguous words.’

He knew how much jugglery goes on with words ; some of it conscious, some of it unconscious, but all pernicious. ‘ Vague and insignificant forms of speech and abuse of language have for so long passed for mysteries of science ; and hard and misapplied words, with little or no meaning, have, by prescription, such a right to be mistaken for deep learning and height of speculation, that it will not be easy to persuade either those who speak or those who hear them that they are but the covers of ignorance and hindrance of true knowledge. To break in upon this sanctuary of vanity and ignorance will be, I suppose, some service to the human understanding.’

Locke had an analytical mind. He desired to understand and to explain things, not to write rhetorically about them. There were mysteries enough which he was contented to let alone ; he knew that human faculties were limited, and reverentially submitted to ignorance on all things beyond his reach. But though he bowed down before that which was essentially mysterious, he was anxious not to allow that which was essentially cognisable to be enveloped in mystery. Let that which is a mystery remain undisturbed : let that which is not necessarily a mystery be brought into the light of day. Know the limits of your understanding—*beyond* those limits it is madness to attempt to penetrate ; *within* those limits it is folly to let in darkness and mystery, to be incessantly wondering, and always assuming that matters cannot be so plain as they appear, and that something lying deeper courts our attention.

To minds otherwise constituted—to men who love to dwell in the vague regions of speculation, and are only at ease in an intellectual twilight—Locke is naturally a disagreeable teacher. He flatters none of their prejudices ; he falls in with none of their tendencies. Mistaking obscurity for depth, they accuse him of being superficial. The owls declare the eagle is blind. They prefer the twilight ; he

They sneer at his ‘shallowness.’ So frequent are the sneers and off-hand charges against him that I, who had read him in my youth with delight, began to suspect that my admiration had been rash. The proverb says, ‘Throw but mud enough, some will be sure to stick.’ It was so with Locke. Reiterated depreciation had somewhat defaced his image in my mind. The time came however when, for the purposes of this History, I had to read the *Essay on Human Understanding* once more, carefully, pen in hand. The image of John Locke was again revived within me; this time in more than its former splendour. His modesty, honesty, truthfulness, and directness, I had never doubted; but now the vigour and originality of his mind, the raciness of his colloquial style, the patient analysis by which he has laid open to us such vast tracts of thought, and above all, the manliness of his truly practical understanding, are so strongly impressed upon me that I feel satisfied the best answer to his detractors is to say, ‘Read him.’ From communion with such a mind as his, nothing but good can result. He suggests as much as he teaches.

§ III. LOCKE’S METHOD.

‘It may be said that Locke created the science of Metaphysics,’ says D’Alembert, ‘in somewhat the same way as Newton created Physics. . . . To understand the soul, its ideas and its affections, he did not study books; they would have misdirected him; he was content to descend within himself, and after having, so to speak, contemplated himself a long while, he presented in his *Essay* the mirror in which he had seen himself. In one word, he reduced Metaphysics to that which it ought to be, viz. the experimental physics of the mind.’ *

This is great praise, and from high authority, but we suspect that it can only be received with some qualification.

* ‘En un mot, il réduisit la métaphysique à ce qu’elle doit être, en effet, la physique expérimentale de l’âme.’—*Discours prélim. de l’Encyclopédie*.

Locke made no great discovery which changed the face of science. He was not even the first to turn his glance inwards. Descartes and Hobbes had been before him.

Yet Locke had his Method; a Method peculiarly his own. Others before him had cast a hasty glance inwards, and dogmatised upon what they saw. He was the first to watch patiently the operations of his mind, that, watching, he might surprise the evanescent thoughts, and steal from them the secret of their combinations. He is the founder of modern Psychology. By him the questions of Philosophy are boldly and scientifically reduced to the primary question of the limits of human understanding. By him is begun the *history* of the development and combination of our thoughts. Others had contented themselves with the thoughts as they found them; Locke sedulously inquired into the *origin* of all our thoughts. To complete his Psychology, he should have opened an inquiry into the origin of our Faculties.

M. Victor Cousin, who, as a rhetorician, is in constant antagonism to the clear and analytical Locke, makes it an especial grievance that he and his school have considered the question respecting the origin of ideas as fundamental. 'It is from Locke,' he continues, 'that has been borrowed the custom of referring to savages and children, upon whom observation is so difficult; for the one class we must trust to the reports of travellers, often prejudiced and ignorant of the language of the country visited; for the other class (children), we are reduced to very equivocal signs.'*

Locke wanted to collect facts concerning the origin of ideas; and this is a practice inseparable from true scientific psychological research. Perhaps no source of error has been more abundant than the obstinacy with which men have in all times looked upon their associations as irresistible truths—as primary and universal truths. A little analysis—a little observation of minds removed from the influences which fostered those associations, would prove

* *Histoire de la Philos.* 17^e leçon.

that those associations were not universal truths, but simply associations. It is because men have analysed the cultivated mind that they have been led to false results; had they compared their analysis with that of an uncultivated mind, they might have gained some insight. The objection against Locke's practice could only proceed from men who study Psychology without previous acquaintance with Physiology—which, though they do not know it, is the same as studying functions without any knowledge of the organs. Locke was the first who systematically sought in the history of the development of the mind for answers to many of the fundamental questions of Psychology, and he has been blamed for this, in the same spirit as that which dictated the sneers of John Hunter's professional contemporaries, because that admirable anatomist sought in comparative anatomy for elucidation of many anatomical problems. Nowadays no well-informed student is ignorant of the fact that Comparative Physiology and Embryology are our surest guides in all biological questions, simply because we therein see the problems gradually removed from many of the complexities which in the higher and more completely developed organisms frustrate our research. Locke saw clearly enough that the philosophers were accustomed to consider their minds as types of the human mind; whereas their minds, being filled with false notions and warped by prejudices, could in nowise be taken as types; for even granting that the majority of their notions were *true*, yet these true notions were not portions of the furniture of universal minds. He sought for illustrations from such minds as had not been so warped.

His object was 'to inquire into the *original, certainty, and extent*, of human knowledge.' He was led to this by a conversation with some friends, in which, disputes growing warm, 'after we had puzzled ourselves awhile, without coming any nearer a resolution of those doubts which perplexed us, it came into my thoughts that we took a *wrong course*; and that, before we set ourselves upon inquiries of

that nature, it was necessary to examine our own abilities, and *see what objects our understandings were or were not fitted to deal with.* *

The plan he himself laid down is as follows :—

‘First, I shall inquire into the original of those ideas, notions, or whatever else you please to call them, which a man observes and is conscious to himself he has in his mind ; and the ways whereby the understanding comes to be furnished with them.

‘Secondly, I shall endeavour to show what knowledge the understanding hath by those ideas ; and the certainty, evidence, and extent, of it.

‘Thirdly, I shall make some inquiry into the nature and grounds of faith or opinion ; whereby I mean that assent which we give to any proposition as true, of whose truth we have yet no certain knowledge ; and we shall have occasion to examine the reasons and degrees of assent.’

We here see decisively settled the question so often raised respecting the importance of Locke’s Inquiry into Innate Ideas. ‘For Locke and his school,’ says M. Cousin, justly, ‘the study of understanding is the study of Ideas ; hence the recent celebrated name of Ideology for the designation of the science of mind.’ Indeed, as we have shown, the origin of Ideas was the most important of all questions ; upon it rested the whole problem of Philosophy.

According to the origin of our Ideas may we assign validity to them. If they are of human growth and development, they will necessarily partake of human limitations. As Pascal well says, ‘Si l’homme commençoit par s’étudier lui-même, il verroit combien il est incapable de passer outre. Comment pourroit-il se faire qu’une partie connût le tout ?’

Locke has given us a few indications of the state of

* HEGEL, while admitting the plausibility of this procedure, thinks it not less absurd than to refuse to enter the water till we have learnt how to swim. Cf. *Encyclopædie*, § 10, where he argues that we must already *know* before we can examine the instruments of knowledge.

opinion respecting Innate Ideas, which it is worth while collecting. 'I have been told that a short epitome of this treatise, which was printed in 1688, was condemned by some without reading, because innate ideas were denied in it, they too hastily concluding that, if innate ideas were not supposed, there would be little left either of the notion or proof of spirits.' Recapitulating the contents of the chapter devoted to the refutation of innate ideas, he says, 'I know not how absurd this may seem to the masters of demonstration, and probably it *will hardly down with anybody at first hearing.*'

Locke's inquiry was purely psychological ; although he had been a student of medicine, he never indulges in any physiological speculations, such as his successors, Hartley and Darwin, delighted in. Ideas, and ideas only, solicited his analysis. Dugald Stewart has remarked that in the *Essay* there is not a single passage savouring of the anatomical theatre or of the chemical laboratory.

'If by this inquiry into the nature of the understanding I can discover the powers thereof, how far they reach, to what things they are in any degree proportionate, and where they fail us, I suppose it may be of use to prevail with the busy mind of man to be more cautious in meddling with the things exceeding its comprehension, to stop when it is at the utmost extent of its tether, and sit down in a quiet ignorance of those things which upon examination are found to be beyond the reach of our capacities. We should not then perhaps be so forward, out of an affectation of universal knowledge, to raise questions and perplex ourselves and others about things to which our understandings are not suited, and of which we cannot frame in our minds any clear or distinct perceptions, or whereof (as it has perhaps too often happened) we have not any notions at all. Men have reason to be well satisfied with what God has thought fit for them, since he has given them, as St. Peter says, *πάντα πρὸς ζωὴν καὶ εὐσεβειαν*, whatsoever is necessary for the convenience of life and the information of virtue ; and has put within the reach of their

discovery the comfortable provision for this life, and the way that leads to a better. How short soever their knowledge may be of a universal or perfect comprehension of whatever is, it yet secures their great concerns, that they have light enough to lead them to the knowledge of their Maker and the *sight of their own duties*. Men may find matter sufficient to busy their heads and employ their hands with variety, delight, and satisfaction, if they will not boldly quarrel with their own constitutions, and throw away the blessings their hands are filled with because they are not big enough to grasp everything.

‘We shall not have much reason to complain of the narrowness of our minds if we will but employ them about what may be of use to us, for of that they are very capable; and it will be an unpardonable as well as childish peevishness if we undervalue the advantages of our knowledge, and neglect to improve it to the ends for which it was given us, because there are some things set out of reach of it. It will be no excuse to an idle and untoward servant who would not attend his business by candle-light, to plead that he had not broad sunshine. The candle that is set up within us shines bright enough for all our purposes.

‘When we know our own strength, we shall the better know what to undertake with hopes of success;* and when we have well surveyed the powers of our own minds, and made some estimate what we may expect from them, we shall not be inclined either to sit still, and not set our thoughts on work at all, despairing of knowing anything; or, on the other side, question everything, and disclaim all knowledge because some things are not to be understood. It is of great use to the sailor to know the length of his line, though he cannot with it fathom all the depths of the ocean. It is well he knows that it is long enough to reach the bottom at such places as are necessary to direct his voyage, and caution him against

* ‘The real cause and root of almost all the evils in science is this: that, falsely magnifying and extolling the powers of the mind, we seek not its true helps.’ --BACON.

running upon any shoals that they may ruin him. . . . This was that which gave the first rise to this Essay concerning the Understanding; for I thought that the first step towards satisfying several inquiries the mind of man was very apt to run into was to take a survey of our own understandings, and to see to what things they were adapted. Till that was done I suspected we began at the wrong end, and in vain sought for satisfaction in a quiet and sure possession of truths that most concerned us, whilst we let loose our thoughts into the vast ocean of being; as if that boundless extent were the natural and undoubted possession of our understandings, wherein there is nothing exempt from its decisions, or that escaped its comprehension. Thus men extending their inquiries beyond their capacities, and letting their thoughts wander into those depths where they can find no sure footing, it is no wonder that they raise questions and multiply disputes, which, never coming to any clear resolution, are proper only to continue and increase their doubts, and to confirm them at last in perfect scepticism.'

The objective tendency of Locke's unmetaphysical mind led him to a clear recognition of the Scholastic error respecting Essences, i.e. the existence of entities corresponding to general terms. He showed that what had for centuries been regarded as essences of classes were merely the signification of their *names*: and I agree with Mr. Mill in considering this among the most valuable of the many services Locke rendered to Philosophy.

It should be added however that Locke, when 'he extirpated the parent error, could not shake himself free from that which was its fruit. He distinguished two sorts of essences, Real and Nominal. His nominal essences were the essences of classes. But he also admitted real essences, or essences of individual objects, which he supposed to be the causes of the sensible properties of those objects. We know not, he said, what these essences are (and this acknowledgment rendered the fiction comparatively innocuous); but if we did, we could from them alone demonstrate the sensible properties of the

object, as the properties of the triangle are demonstrated from the definition of a triangle.*

The decisive manner in which Locke separates himself from the ontologists is historically noteworthy, and is also noticeable as giving the tone to his subsequent speculations.

§ IV. THE ORIGIN OF OUR IDEAS.

We have admired the Portico ; let us enter the Temple.

Hobbes had said, with Gassendi, that all our ideas are derived from sensations ; *nihil est in intellectu quod non prius fuerit in sensu*. Locke, who is called a mere populariser of Hobbes, said that there were *two* sources, not *one* source, and these two were SENSATION and REFLECTION. Separating himself decisively from the upholders of the doctrine of innate ideas—of truths independent of experience,—he declared that all our knowledge is founded upon experience, and from experience it ultimately derives itself. Separating himself no less decisively from the Gassendists, who saw no source of ideas but Sensation, he declared that, although Sensation was one great source of our ideas, yet there was ‘another fountain from which experience furnisheth the understanding with ideas ;’ and this source, ‘*though it be not sense*, as having nothing to do with external objects, yet it is very like it, and might properly enough be called *internal sense* :’ this he calls Reflection.

After Dugald Stewart’s ample exposure of the widespread error that Locke was the chief of the so-called Sensational School, we need spend little time inquiring whether Locke did or did not teach that all knowledge was referable to sensation. The passages which contradict the vulgar error are numerous and decisive. Dugald Stewart has selected several ; but perhaps the one we have just quoted will be considered sufficiently explicit. Reflection, he says, ‘*though it be not the sense*,’ may yet analogically be considered as

* MILL : *Logic*, i. 126.

an internal sense. To prevent all misconception, however, we will as a decisive example refer to his proof of the existence of God, which he sums up by saying, 'It is plain to me that we have a more certain knowledge of the existence of a God than of anything our senses have not immediately discovered to us. Nay, I presume I may say that we may more certainly know that there is a God than that there is anything else without us.' (Book iv. ch. x.)

Historians have not accorded due praise to Locke for the important advance he made towards a solution of the great question respecting the origin of knowledge. While Leibnitz has been lauded to the skies for having expressed this doctrine in an epigram, Locke has not only been robbed of his due, but has been sacrificed to his rival. It is commonly said, 'Locke reduced all our knowledge to Sensation: Leibnitz came and accepted the old adage of *nihil est in intellectu quod non prius fuerit in sensu*, but he accepted it as only half the truth; and therefore added *nisi ipse intellectus*.' Now, firstly, Locke did not accept the adage as the whole truth; he said that Reflection was a second source of Ideas. Secondly, Dugald Stewart has remarked that the addition which Leibnitz made when he said there is nothing in the intellect which was not previously in the sense, *except the intellect itself*, expresses no more than the doctrine of Locke, who says, 'External objects furnish the mind with ideas of sensible qualities; and the mind furnishes the understanding with the ideas of its own operations.' Thirdly, although the phrase is epigrammatic, and thereby has had such success in the world as epigrams usually have it will not bear scrutiny. Except as a verbal jingle, how trivial is the expression—the intellect *in* the intellect! Suppose a man to say, 'I have no money in my purse, except my purse itself,' he would scarcely be less absurd. For when the Schoolmen said, 'nothing was in the intellect which was not previously in the sense,' they did not mean that the intellect was the same as the sense; they meant that the intellect was furnished with no ideas, notions, or con-

ceptions, which had not been furnished them by sense; they meant that the senses were the inlets to the soul.

Dr. Whewell approves of the epigram; and alluding to Mr. Sharpe's objection to it, viz. that we cannot say the intellect is *in* the intellect, he says, 'This remark is obviously frivolous; for the faculties of the understanding (which are what the argument against the Sensational School requires us to reserve) may be said to be in the understanding with as much justice as we may assert that there are in it the impressions derived from sense.' We submit that the 'faculties' of the understanding are not '*all* that must be reserved for the arguments against the Sensational School' (if the Lockists be meant, and to them only did Leibnitz address himself,) for the simple reason that the faculties *never* were denied.* Opponents have attributed such a notion to Locke's school; no member of that school ever proposed it. The question never was—*Have we an Understanding, and has that Understanding certain Faculties?* The question simply was—*What is the origin of our Ideas: are they partly innate and partly acquired; or are they wholly acquired, and, if so, is Sense the sole inlet?*

To this plain question some replied plainly, 'Sense is the origin of all our ideas.' Locke replied, 'Sense and Reflection are the sources of all our ideas.'

Leibnitz replied, 'There is nothing in the intellect which was not previously in the sense; except the intellect itself:' which latter remark is altogether *beside* the question. And yet this remark has called forth many pages of laudatory declamation: in which Locke is cast into the background, and charged with having overlooked the important fact that man has an intellect as well as senses. This notion, once started, continued its triumphant course. Men are for the most part

* LOCKE often speaks of the operations of the mind as proceeding from powers intrinsic and proper to itself. He says also: 'Thus the first *capacity* of human intellect is that the mind is fitted to receive the impressions made on it; either through the senses by outward objects or *by its own operations when it reflects on them.*'—*Essay*, b. ii. c. i. § 24.

like sheep, who always follow the bell-wether: what one boldly asserts, another echoes boldly; a third transmits it to a fourth, and the assertion becomes consolidated into a traditional judgment. Some one more serious, or more independent than the rest, looks into the matter; sees an error, exposes it; but tradition rolls on its unimpeded course. I do not expect to shake the traditional error respecting Locke; I was bound, however, to signalise it. Locke does *not* derive all our knowledge from sensation; Leibnitz has *not* made any addition by his too famous *nisi ipse intellectus*.*

By sensation, Locke understands the simple operation of external objects through the senses. The mind is herein wholly passive. The senses, therefore, may be said to furnish the mind with one portion of its *materials*. By reflection he understands that internal sense by means of which the mind observes its own operations. This furnishes the second and last portion of the materials out of which the mind frames knowledge. 'If it shall be demanded,' he says, 'when a man begins to have any ideas, I think the true answer is, when he first has any sensation. For since there appear not to be any ideas in the mind before the senses have conveyed any in, I conceive that ideas in the understanding are coeval with sensation.' This is making a decisive stand against the upholders of innate ideas; but it is a very rude and incomplete view.

Plato finely compares the soul to a book, of which the senses are the scribes.† But writing is only possible after a series of tentatives; the hand must practise before it can steady itself sufficiently to trace letters; so also must the senses learn by repetition to trace intelligible figures on the *tabula rasa* of the mind.

Locke continues his account of the origin of all our knowledge thus: 'In time the mind comes to reflect on its own

* LEIBNITZ himself says, when making the distinction, 'Cela s'accorde assez avec votre auteur de l'Essai, qui cherche une bonne partie des idées dans la réflexion de l'esprit sur sa propre nature.'—*Nouveaux Essais*, ii. c. i.

† *Philebus*, p. 192, ed. BEKKER. PLATO's words are not given in the text, but the sense is,

operations about the ideas got by sensation, and thereby stores itself with a new set of ideas, which I call ideas of reflection. These are the impressions which are made on our senses by outward objects that are extrinsical to the mind, and its own operations proceeding from powers intrinsical and proper to itself; which when reflected on by itself, becoming also objects of its contemplation, are, as I have said, the original of all knowledge. Thus the first capacity of the human intellect is that the mind is fitted to receive the impressions made on it; either through the senses by outward objects or by its own operations when it reflects on them. This is the first step that a man makes towards the discovery of and the groundwork whereon to build all those notions which ever he shall have naturally in this world. All those sublime thoughts which tower above the clouds, and reach as high as heaven itself, take their rise and footing here: in all that good extent wherein the mind wanders, in those remote speculations it may seem to be elevated with, it stirs not one jot beyond those ideas which sense or reflection has offered for its contemplation.

‘When the understanding is once stored with these simple ideas, it has the power to repeat, compare, and unite, them, even to an almost infinite variety, and so can make at pleasure new complex ideas. But it is not in the power of the most exalted wit, or enlarged understanding, by any quickness or variety of thought, to invent or frame one new simple idea in the mind not taken in by the ways aforementioned.’

Whoever attentively considers these passages, or consults the *Essay on the Understanding* with a view of ascertaining what precisely was the position held by Locke, will, I think, soon arrive at the conviction that, although he presupposes the existence of an active Mind (consequently of Faculties capable of being excited into activity by the operation of external objects through Sense), he was in a state of indecision and confusion respecting the faculties themselves and the psychological process; he could not

therefore fairly meet all the objections which the other school might urge.

He is distinguished from the Sensational School by the absence of any notion of evolving the Faculties from sensations. He proclaimed Sense the purveyor of food for the Mind; he did not conceive that Mind itself was developed out of Sense. As to ideas, the mind was a *tabula rasa* before experience came to write on it; but as to Faculties, the mind was—something which he had never made clear to himself.

Thus although he was strong in argument against Innate Ideas, and against all the attempts to establish a source of knowledge independent of Experience, he had but confused notions of what this Mind was, the existence of which he assumed, and of what relations of dependence existed between the Faculties and sensations. In a word, the elementary biological facts were unsuspected; and consequently there was much in his exposition which was unsatisfactory; as opponents were quick in discovering.

Opponents, however, and especially Leibnitz, committed a great oversight in charging him with not having recognised the fact on which they lay so much stress, namely, that we have ideas which have their foundation in the Mind, and which consequently have a certitude superior in its universality and necessity to any sense-knowledge. These ideas are derived from the perception of the relations which exist among our abstract ideas—as in mathematics. Thus while the origin of all simple ideas is in Sense, and our certitude can never go beyond what is thus given in experience, the relations of these ideas among each other are of universal *à priori* certitude.

§ V. ELEMENTS OF IDEALISM AND SCEPTICISM IN LOCKE.

It is certain that Locke was neither an Idealist, like Berkeley, nor a Sceptic, like Hume. Nevertheless, if we examine attentively, we shall see certain elements in his psychology which were easily developed into both these doctrines.

Can we know things as they are? Descartes and his followers suppose that we can: their criterion is the clearness and distinctness of ideas. Locke said, ‘*Distinct* ideas of the several sorts of bodies that fall under the examination of our senses, perhaps we may have; but *adequate* ideas I suspect we have not of any one amongst them.’ Ideas, however clear, are never adequate because they are subjective. But Locke only went halfway towards the conception of knowledge as subjective. He did not think that all our ideas were images, copies of external objects; but he expressly taught that our ideas of what he calls *primary qualities* are *resemblances* of what really exists in bodies; adding, that ‘the ideas produced in us by *secondary qualities* have no resemblances of them at all. There is nothing like our ideas existing in the bodies themselves. They are, in the bodies we denominate from them, only a power to produce those sensations in us.’

It is remarkable that the last sentence did not lead him to the conclusion that *all* the qualities which we perceive in bodies are the products of sensations in us; and that it is we who attribute to the object-causes of these sensations a form analogous to their subject-effects. He himself warned us ‘that so we may not think (as perhaps usually is done) that they (ideas) are exactly the images and resemblances of something inherent in the subject; most of those of sensation being in the mind no more the likeness of something existing without us than the names that stand for them are likenesses of our ideas, which yet upon hearing they are apt to excite in us.’ And elsewhere, ‘It being no more impossible to conceive that God should annex such ideas to such motions (i.e. the motions of objects affecting the senses) with which they have no similitude than that He should annex the idea of pain to the motion of a piece of steel dividing our flesh, with which that idea hath no resemblance.’

From these passages it will be seen how clearly Locke understood the subjective nature of one portion of our knowledge. He did not carry out the application of his principles to primary qualities, owing perhaps to inveterate

association having too firmly established the contrary in his mind. Everyone is willing to admit that colour, light, heat, perfume, taste, etc. are not qualities in the bodies, which are reproduced in us, but simply conditions of our Sensibility when placed in certain relations with certain bodies. Yet few are willing to admit—indeed only philosophers (accustomed as they are to undo their constant associations) can conceive that the primary qualities, viz. extension, solidity, motion, and number, are other than real qualities of bodies—*copies* of which are impressed upon us. And yet these qualities are no less subjective than the former. They do not belong at all to bodies, except as powers to produce in us the sensations. They are demonstrably as much the effects produced in us by objects as the secondary qualities are; and the latter everyone admits to be the *effects*, and not *copies*. Wherein lies the difference? wherein the difficulty of conceiving primary qualities not to belong to bodies? In this: the primary qualities are the *invariable* conditions of sensation. The secondary qualities are the *variable* conditions. We can have no perception of a body that is not extended, that is not solid (or the reverse), that is not simple or complex (number), that is not in motion or in rest. These are invariable conditions. But a body is not necessarily of any particular colour, taste, scent, heat, or smoothness; it may be colourless, tasteless, scentless. These secondary qualities are all variable. Consequently the one set, being invariable, have occasioned indissoluble associations in our minds, so that it is not only impossible for us to imagine a body, without at the same time imagining it as endowed with these primary qualities; but also we are irresistibly led to believe that the bodies we perceive do certainly possess those qualities quite independently of us. Hence it has been said that the Creator Himself could not make a body without extension: for such a body is impossible. The phrase should be, ‘such a body it is impossible for *us* to conceive.’ But our indissoluble associations are not proofs of objective reality.

That we cannot conceive body without extension is true;

but that, because we cannot conceive it, the contrary must be false is preposterous. All our assertion in this matter can amount to is that knowledge must be subordinate to the conditions of our nature. These conditions are not conditions of things, but of our organisations. If we had been so constituted as that all bodies should affect us with a sensible degree of warmth, we should have been irresistibly led to conclude that warmth was a quality inherent in body; but because warmth varies with different bodies, some warm, others cold, there is no indissoluble association formed. And so of the other qualities.

To return to Locke: he has very well stated the nature of our knowledge of external things, though he excepts primary qualities. 'It is evident,' he says, 'that the bulk, figure and motion of several bodies about us produce in us several sensations, as of colours, sounds, tastes, smells, pleasure and pain, etc. These mechanical affections of bodies having no affinity at all with those ideas they produce in us (there being no conceivable connection between any impulse of any sort of body, and any perception of a colour or smell which we find in our minds), we can have no distinct knowledge of such operations beyond our experience, and can reason about them no otherwise than as the effects produced by an infinitely wise Agent, which perfectly surpass our comprehensions.'

He shortly after says, 'The things that, as far as our observation reaches, we constantly find to proceed regularly, we may conclude do act by a law set them; but yet by a law that we know not: whereby, though causes work steadily, and effects constantly flow from them, yet their connections and dependencies being not discoverable in our ideas, we can have but an experimental knowledge of them.'

Here we have Hume's doctrine of Causation anticipated.

To prove the subjective nature of our knowledge is but one step towards the great question. The second step, which it is vulgarly supposed was only taken by Berkeley and Hume, was also taken by Locke. Hear him. 'Since the

mind in all its thoughts and reasonings hath no other immediate object but its own ideas, which it alone does or can contemplate, it is evident that our knowledge is only conversant about them. Knowledge, then, seems to me nothing but the perception of the connection and agreement, or disagreement and repugnancy, of any one of our ideas.'

This is the great stronghold of Idealism and Scepticism. Locke foresaw the use which would be made of it; and he stated the problem with remarkable precision. 'It is evident that the mind knows not things immediately, but only by the intervention of ideas it has of them. Our knowledge therefore is real only so far as there is a conformity between our ideas and the reality of things. *But what shall be here the criterion? How shall the mind, when it perceives nothing but its own ideas, know that they agree with the things themselves?*'

Thus has he stated the problem which was solved by Idealism on the one hand, and by Scepticism on the other. Let us see how it will solve it. There are two sorts of ideas, he says, the simple and the complex; or, to use more modern language, perceptions and conceptions. The first 'must necessarily be the product of things operating on the mind in a natural way, and producing those perceptions which by the wisdom and will of our Maker they are ordained and adapted to. From whence it follows that simple ideas are not fictions of our fancies, but the natural and regular productions of things without us really operating upon us; and so carry with them all the conformity which is intended, or which our state requires: for they represent things to us under those appearances which they are fitted to produce in us.'

This, though it cuts the Gordian knot of Scepticism, leaves the question of Idealism unanswered; indeed we shall see presently how Berkeley escaped it by affirming that ideas did not *agree* with things, there being in truth nothing in objects but the ideas themselves, nothing *answering* to ideas,

since ideas *were* objects. It is a plain and explicit avowal of the relativity of our knowledge; of the impossibility of ever transcending the sphere of our consciousness and penetrating into the essence of things. Complex ideas being made out of simple ideas, we need not examine their pretensions to infallibility. All human certainty is therefore only a relative certainty. Ideas may be true for us, without being at all true when considered absolutely. Such is Locke's position. He stands upon a ledge of rock between two yawning abysses. He will stand there, and proceed no further. Why should he move when he knows that a single step will precipitate him into some fathomless gulf? No; he is content with his ledge of rock. 'The notice we have by our senses,' he says, 'of the existence of things without us, though it be not altogether so certain as our intuitive knowledge or the deductions of our reason, employed about the clear abstract ideas of our own minds; yet it is an assurance that deserves the name of knowledge. If we persuade ourselves that our faculties act and inform us right concerning the existence of those objects that affect them, it cannot pass for an ill-grounded confidence; for I think nobody can in earnest be so sceptical as to be uncertain of the existence of those which he sees and feels. At least he that can doubt so far (whatever he may have with his own thoughts) will never have any controversy with me, since he can never be sure I say anything contrary to his own opinions. As to myself, I think God has given me assurance enough as to the existence of things without me; since by their different application I can produce in myself both pleasure and pain, which is one great concernment of my present state. We cannot act by anything but our faculties; nor talk of knowledge but by the help of those faculties which are fitted to apprehend even what knowledge is.'

Again, anticipating the objection that 'all we see, hear, feel and taste, think, and do, during our whole being, is but the series and deluding appearances of a long dream, and therefore our knowledge of anything be questioned; I must

desire him to consider that, if all be a dream, then he doth but dream that makes the question; and so it is not much matter that a waking man should answer him. But yet, if he pleases, he may dream that I make him this answer, That the *certainty* of things existing in *rerum naturâ*, when we have the testimony of our senses for it, is not only as great as our frame can attain to, but as our condition needs.' This leaves Idealism unanswered; but it pronounces Scepticism to be frivolous: 'for our faculties,' he continues, 'being not suited to the full extent of being, nor to a perfect, clear, comprehensive knowledge of things free from all doubt and scruple, but to the preservation of us, in whom they are, and accommodated to the use of life; they serve our purpose well enough, if they will but give us certain notice of those things which are convenient or inconvenient to us.'

That this is very good common-sense everyone will admit. But it is no answer to Scepticism. Hume, as we shall see hereafter, proclaimed the very same opinions: but the difference between him and Locke was that he knew such opinions had no influence whatever upon the philosophical question, but simply upon the practical affairs of life; whereas Locke, contenting himself with the practical, disdained to answer the philosophical question.*

We may sum up the contents of this section by saying that Locke distinctly enough foresaw the Idealistic and Sceptical arguments which might be drawn from his principles. He did not draw them, because he thought them frivolous. Aware that all human certitude could only be relative certitude—that human knowledge could never embrace the nature of things, but only the nature of their effects on us—he was content with that amount of truth, and 'sat down in quiet ignorance of those things which are beyond the reach of our capacities.' The grand aim of the *Essay* was to prove that all knowledge is founded on Experience. That proved,

* REID conjectures that 'Locke had a glimpse of the system which Berkeley afterwards advanced, though he thought proper to suppress it within his own breast.' Not to suppress, but to disdain it.

he was aware that Experience never could be other than relative—it could only be *our* experience of things; and our experience could be no *absolute* standard; it could only be a standard for us.

§ VI. LOCKE'S CRITICS.

We cannot leave the great Englishman without adverting to the tone adopted by many of his critics. This tone has been anything but considerate. That men should misrepresent Spinoza, Hobbes, or Hume, is intelligible enough; when men are frightened, in their terror they exaggerate and distort what they see. That they should misrepresent Kant, Fichte, or Hegel, is also intelligible; the abstractness of the speculations and the difficulty of the language are sufficient excuses. But that they should misrepresent Locke is wholly inexcusable. He was neither an audacious speculator nor a cloudy writer. His fault was that he spoke plainly and honestly. He endeavoured to explain the Chemistry of the Mind (if the metaphor be permissible), renouncing the vague futile dreams of Alchemy. All those men who still seek to penetrate impenetrable mysteries, and refuse to acknowledge the limits of man's intelligence, treat Locke with the same superb disdain as the ambitious alchemists treated the early chemists. The tone in which most modern Frenchmen and Germans speak of Locke is painful; the tone in which many Englishmen speak of him is inexcusable.

There is no excuse for not understanding Locke. His language may be occasionally loose and wavering, but his meaning may always be gathered from the context. He had not the lucidity of Descartes or of Hobbes; but he was anxious to make himself intelligible, and to this end he varied his expressions, and stated his meaning in a variety of forms. He must not be taken literally. No single passage is to be relied on, unless it be also borne out by the whole tenour of his speculations. Any person merely 'dipping into'

the *Essay* will find passages which seem very contradictory ; any person carefully reading it through will find all clear and coherent.

The most notorious of Locke's modern critics is Victor Cousin. He has undertaken an examination and refutation of all Locke's important positions. The celebrity of his name and the popular style of his lectures have given great importance to his criticism ; but his criticism is very unfair, and extremely shallow. We cannot here examine his examination : a volume would not suffice to expose all his errors. Let one example of the unfairness, and one of the shallowness, suffice :—

Speaking of the principle of reflection, he says : ‘ In the first place, remark that Locke here evidently confounds reflection with consciousness. Reflection, strictly speaking, is doubtless a faculty analogous to consciousness, but distinct from it, and which more particularly belongs to philosophers, whereas consciousness belongs to every man.’

We answer that, in the first place, so far from its being evident that Locke confounds reflection with consciousness, his whole *Essay* proves the contrary. In the second place, M. Cousin, using the word reflection in a peculiar sense (viz. as tantamount to speculation), forces that sense upon Locke, and thus makes the contradiction ! If M. Cousin had interpreted Locke fairly, he could never have thus ‘ caught him on the hip.’

It is quite true that, in the passage quoted by M. Cousin, the faculty of reflection is limited to the operations of the mind ; but, as we said, to pin Locke down to any one passage is unfair ; and his whole *Essay* proves, in spite of some ill-worded definitions, that by reflection he meant very much what is usually meant by it, viz. the activity of the mind in combining the materials it receives through sense, and becoming thus a source of ideas.

This leads us to the second example. M. Cousin, wishing to prove, against Locke, that we have ideas from some other source besides sensation and reflection, instances the idea of

space, and examines how it was possible to obtain that idea through sensation and reflection. That the idea of pure space could not have been obtained through the senses he seems to think is satisfactorily proved by proving that the idea has nothing sensuous in it; that it could not have been obtained through reflection, because it has nothing to do with the operations of our understanding, is equally evident to him. Hence, as both sources fail, he pronounces Locke's account of the origin of our knowledge 'incomplete and vicious.'

This argument, which extends to several pages, is deemed by M. Cousin triumphant. Locke indeed says that 'we get the idea of space both by our sight and touch.' Any honest inquirer would never quibble upon this—would never suppose Locke meant to say that space is a *sensation*. He would understand that Locke meant to say, 'the idea of space is an abstraction: the primary materials are obtained through our touch and sight.' Locke did not anticipate any quibbling objection, so did not guard against it; but in his explanation of our idea of substance he has given an analogous case; although his antagonists have also frequently objected that the idea of substance never could have been obtained through sense. It has been thought an irresistible argument against Locke's theory: the very fact that we have an idea of substance is supposed to be sufficient proof of some other source of knowledge than sensation and reflection. This is an example of how carelessly Locke has been read. He expressly tells us, in more places than one, that the idea of substance (and by idea he does not here mean *image*, but a *thought*) is an inference grounded upon our experience of external things. True it is that we perceive nothing but phenomena, but our minds are so constituted that we are forced to suppose these phenomena have substances lying underneath them.

'If anyone will examine himself,' he says, 'concerning his notions of pure substance in general, he will find he has no other idea of it at all, but only a supposition of he knows not what support of such qualities which are capable of

producing simple ideas in us, which qualities are commonly called accidents. If anyone should be asked what is the subject wherein colour or weight inheres, he would have nothing to say but the solid extended parts; and if he were demanded what is it that solidity and extension inhere in: he would not be in a much better case than the Indian, who, saying that the world was supported by a great elephant, was asked what the elephant rested on, to which his answer was, A great tortoise; but being again pressed to know what gave support to the great broad-backed tortoise, replied, Something, he knew not what.'

The same course of argument will apply to space. M. Cousin declaims, and brings forward many arguments and illustrations, all utterly trivial, to show that the idea of space could never have been a sensation. A little more attention in reading the author he attacks would have saved him all this trouble. Locke never for an instant supposed that the idea of space could have been a sensation: on the fact that it could not, he grounds his position that the idea is vague, and is a mere supposition.

Now let us hear an Englishman, who is also an historian:— 'We need not spend much time in pointing out the inconsistencies into which Locke fell,' says Dr. Whewell, 'as all must fall into inconsistencies who recognise no source of knowledge except the senses.' Let us remark, in the first place, that it is surely a questionable procedure thus to pass over so great a man as Locke, whose influence has been general and lasting, and whose 'inconsistencies' it behoved Dr. Whewell, more than most men, to refute, inasmuch as Locke's principles refute *his* whole philosophy. Secondly, it is a misrepresentation to assert Locke's having recognised 'no source of knowledge except the senses.' Locke *did* recognise another source. 'Thus he maintains,' continues Dr. Whewell, 'that our idea of space is derived from the senses of sight and touch—our idea of solidity from the touch alone. Our notion of substance is an unknown support of unknown qualities, and is illustrated by the Indian

fable of the tortoise which supports the elephant which supports the world.'

Space we have already considered in answering M. Cousin. As to solidity, if the idea be not derived from the sensation, from whence is it derived? And as to substance, we must here again notice a misrepresentation of Locke, who does not define it as 'an unknown support of unknown qualities,' but as an unknown support of *known* qualities: from our knowledge of the qualities we infer the existence of some substratum in which they inhere. We are, with respect to substance, somewhat in the condition of a blind man, who whenever he moved in a certain direction, should receive a blow from some revolving wheel. Although unable to see the wheel, and so understand the cause of pain he received, he would not hesitate to attribute that cause to something without him. All he could ever know, unassisted, would be the fact of his being struck when he moved in a certain direction; he could have no other knowledge of the wheel, yet he would be quite certain that there was something besides his pain, and that unknown something would stand to him in a relation somewhat similar to that in which the unknown support of known accidents of bodies stands to us. This is Locke's meaning.

'Our notion of power or cause,' continues the historian, 'is in like manner got from the senses: and yet, though these ideas are thus mere fragments of our experience, Locke does not hesitate to ascribe to them necessity and universality when they occur in propositions. Thus he maintains the necessary truth of geometrical properties; he asserts that the resistance arising from solidity is absolutely insurmountable; he conceives that nothing short of Omnipotence can annihilate a particle of matter; and he has no misgivings in arguing upon the axiom that everything must have a cause. He does not perceive that, upon his own account of the origin of our knowledge, we can have no right to make any of these assertions. If our knowledge of the truths which concern the external world were wholly

derived from experience, all that we could venture to say would be that geometrical properties of figures are true *as far as we have tried them*; that we have seen *no example* of a solid body being reduced to occupy less space by pressure, or of a material substance annihilated by natural means; and that, *wherever we have examined*, we have found that every change has had a cause.'

This is only one among many instances of Dr. Whewell's want of accurate interpretation of Locke. The fallacy on which his argument rests, we shall examine at some length when we come to treat of Kant. Meanwhile let the following passage prove that Locke did not hesitate to ascribe necessity and universality to certain ideas when they 'occur in propositions,' but very clearly explained the nature of this necessity in a masterly passage: 'There is one sort of propositions concerning the existence of anything answerable to such an idea; as having the idea of an elephant, phoenix, motion, or angle, in my mind, the first and natural inquiry is whether such a thing does anywhere exist. And this knowledge is only of particulars. No existence of anything without us, except God, can certainly be known further than our senses inform us.

'There is another sort of propositions, wherein is expressed the agreement or disagreement of our abstract ideas and their dependence on one another. *Such propositions may be universal and certain.* So, having the idea of God and of myself, of fear and obedience, I cannot but be sure that God is to be feared and obeyed by me: and this proposition will be certain concerning man in general, *if I have made an abstract idea of such species whereof I am one particular.* But yet this proposition, how certain soever, that men ought to fear and obey God, proves not to me the existence of men in the world, but *will be true of all such creatures wherever they do exist*: which certainty of such general propositions depends on the agreement or disagreement to be discovered in those abstract ideas. In the former case our knowledge is the consequence of the existence of things producing ideas in

our minds by our senses ; in the latter, knowledge is the consequence of the ideas (be they what they will) that are in our minds producing their general certain propositions.

‘Many of these are called *æternæ veritates* ; and all of them indeed are so ; not from being written in the minds of all men, or that they were any of them propositions in anyone’s mind till he, having got the abstract ideas, joined or separated them by affirmation or negation. But wheresoever we can suppose such a creature as man is endowed with such faculties, and thereby furnished with such ideas as we have, we must conclude he must needs, when he applies his thoughts to the consideration of his ideas, know the truth of certain propositions that will arise from the agreement or disagreement which he will perceive in his own ideas. Such propositions therefore are called eternal truths, not because they are eternal propositions actually formed and antecedent to the understanding that makes them ; nor because they are imprinted on the mind from any patterns that are anywhere of them out of the mind and existed before ; but because being once made about abstract ideas so as to be true, they will, whenever they can be supposed to be made again at any time by a mind having those ideas, always actually be true.’* This passage is sufficient to exonerate him from the charge of inconsistency ; sufficient also, we believe, to show the error of Dr. Whewell’s own conception of the necessity of certain truths.

The foregoing are samples of the style in which the great master is spoken of by his most modern critics. Let them be sufficient warning to the reader of what he is to expect from the partisans of the reaction against Locke, and his followers ; and stimulate him to the careful study of that author who ‘professes no more than to lay down, candidly and freely, his own conjectures concerning a subject lying somewhat in the dark, without any other design than an unbiassed inquiry after truth.’

* *Essay*, book iv. ch. xi. §§ 13, 14.

CHAPTER III.

LEIBNITZ.

LEIBNITZ was a variously accomplished man, whose immense activity made itself conspicuous in many directions.

While Locke was doing his utmost to destroy Ontology by a psychological proof of the relativity of knowledge, his great critic endeavoured to place Ontology on a scientific basis. He constructed a scheme from logical principles, accepted *à priori*. The principle of Contradiction, the principle of Sufficient Reason, the principle of Final Cause, the principle of Agreement (*convenientiæ*), were all, so to speak, derived from the *à priori* notions of the wisdom and goodness of God. Among the infinitude of possibilities, God, being good, must have chosen that which is best. And what is best? That which presents the most perfect order and harmony. The basis of all philosophy, therefore, will be the conviction that whatever is is for the best; that everything is good, harmonious, and beautiful. ‘On voit par là comment la véritable physique doit être puisée effectivement à la source des perfections divines.’ Philosophy is a Theodicy.

One seems in such passages to hear the murmur of the schools of the twelfth and thirteenth centuries. Leibnitz indeed was a strayed scholastic; and although he investigated scientific problems, he was inspired by the metaphysical spirit. He may be regarded as the chief of the German School, and the illustrious supporter of that union between Philosophy and Theology, which it is the special effort (let us add the special glory) of modern Thought to have separated.

While from Bacon and Descartes downwards there has been the avowed aim of reconstructing a theory of the universe without the aid of Theology, and *with* the aid of Science, Leibnitz may be called the leader of those who have endeavoured to reconcile Science with Theology; modern Philosophy has risen against Scholasticism and its Method, as against a disastrous despotism, Leibnitz avowed his sympathy with Scholasticism, and his efforts to restore it under better auspices; modern Science has aimed at constructing such Metaphysics as it required from the data and conclusions of Physics, Leibnitz aimed at the construction of Physics from the data and conclusions of Metaphysics. In one word, while the *à posteriori* Method has come more and more into favour, Leibnitz remains a most vigorous and unhesitating advocate of the *à priori* Method. The two fundamental conceptions of Monads, as the unities of Matter and Form, and of Pre-established Harmony between the inner and outer worlds, are the metaphysical and theological conceptions to which his *à priori* Method led him. His starting point is that of Final Cause (Plan,) which includes within it, or so to speak, engenders, Causality, i.e. efficient cause. Thus the physical world depends on the moral world; Physics on Metaphysics; phenomena on Order; reality on Thought. This scheme of Idealism, which may be regarded as a prefiguration of the Absolute Idealism of Hegel, we may trace either as a deduction from his conception of Final Cause (*Zweckbegriff*), or upwards from his conception of Matter and Force. The latter course will be followed here.

Let us begin with the problem of Substance.

Descartes and Spinoza had both assumed that the essence of Substance consisted in Extension. Leibnitz victoriously argued that Extension alone was incompetent to explain all the characters of Substance. If we admit that there is no body which has not Extension, this by no means carries the conclusion that bodies are nothing but Extension; whereas on the contrary from the admission of Substance as Force we conclude the existence of Extension. Bodies are not.

simple magnitudes, or else geometry would be the whole of science. In the concept of Substance there is implied that of Motion, which is not deducible from magnitude. Hence it is necessary to mount to a higher metaphysical conception which will embrace all physics—the conception of Force.*

Further, while it is impossible to conceive Substance fully and clearly except as Force, it is equally impossible to form a figurative conception of Force; which is manifested to us in its effects, not in itself. We can demonstrate its *action* by mathematical rules; but what it *is*, we cannot demonstrate by mathematics or experiment. No analysis discloses this fountain of all activity, so that we can say, Here is Force, as the mathematician says, Here is a Circle; or the physicist says, Here is a Vibration. Why is this? Because Force is not a physical, but a metaphysical notion.†

Thus is Force made to absorb Substance, and appear in its true character as Spirit. It belongs to the essence of Soul. Its cardinal qualities, by which alone we can define it, are Indivisibility, Simplicity, Originality and Immortality; which qualities though not sensible are deducible, and are thus deduced:—Force cannot be divisible, because divisibility belongs to Extension, and Extension alone is not Force. Only the extended is divisible; therefore Force, as unextended, is indivisible.‡ Force must be simple, because only that which is divisible, consisting of parts, can be complex. Force must be original, primitive, and eternal, because only that which is composite can arise, and only that which arises can pass away.

Leibnitz having thus got his metaphysical standing-point, was enabled to survey phenomena, and see in them a multiple of existent Forces, or Souls, which he called Monads. They are the true unities (*veræ unitates*), each preserving its individuality indestructible. He calls them

* LEIBNITZ: *Opera Philosophica*, ed. ERDMANN, pp. 112–4.

† *Opera*, pp. 155–6.

‡ This argument halts. Force is conceived as variable, and is admitted to be now greater, now less; here the element of Magnitude is pre-supposed.

metaphysical points, to distinguish them from the physical and mathematical points: the physical having magnitude because they are extended; the mathematical having indeed no magnitude, but having no reality.* The Monads are thus distinguishable from atoms, which indeed are only smaller corpuscles. ‘Pour trouver ces unités réelles,’ he says, ‘je fus contraint de recourir à un atome formel, puisqu’un être matériel ne saurait être en même temps matériel et parfaitement indivisible, ou doué d’une véritable unité.’ †

The derivation of a material universe from spiritual Forces is thus effected:—The monad, as a spiritual existence, is penetrable, for spirit is capable of receiving all forms within it; but as a material existence the monad is impenetrable, nay, its materiality consists in this very impenetrability; and this impenetrability, again, is only the expression of the individuality of the monad. As an individual it is *exclusive*, limited; the exclusion and limitation arise from the co-existence of independent monads, each exerting its force. One limits the other; one excludes the other. Matter is thus the necessary consequence of Force—its manifested energy. It is the *vis resistendi—quod penetranti resistit*. Force has two aspects, active and passive. The passive is what Keppler and his successors name *vis inertiae*, and is by Leibnitz called *materia prima*; from this Density or Mass, which he calls *materia secunda*, is derived. The active force, on the other hand, is the soul of matter—the impulse of its movement. This impulse, or inborn appetite, realizes itself as extended Matter. In itself Force is not extended, nor can Matter be said to consist *in* extension, but in the *need* for extension, *extensionis exigentia*; which need is innate in Force, as the need for Representation is innate in Mental

* ‘On les pourrait appeler *points métaphysiques*: ils ont *quelque chose de vital*, et une espèce de *perception*, et les points mathématiques sont leur point de vue pour exprimer l’univers. . . . Ainsi les points physiques ne sont indivisibles qu’en apparence; les points mathématiques sont exacts, mais ce ne sont que des modalités: il n’y a que les points métaphysiques ou de substance, *constitués par les formes ou âmes*, qui soient exacts et réels.’ *Système nouveau*, § 11, *Opera*, p. 126.

† *Loc. cit.* 124.

Force. 'L'étendue est la diffusion de cette qualité ou nature: par exemple, dans le lait il y a une étendue ou diffusion de la blancheur, dans le corps en général une étendue ou diffusion de l'*antitypie* ou de la matérialité.'

But the material side of the monad is only one aspect of Force. We should err as grossly in considering monads to be only dynamic bodies, as in considering them to be only forces without material limits and differences. Force is active no less than passive. Active Force is that which acts from itself, spontaneously, inalterably. It is self-moved, not moveable; self-divided, not divisible. It constitutes the Form; the Substantial Form; the Entelechy: in one word the *soul*.*

Matter is thus the externality of Mind, the manifestation of Force, the Phenomenon of Spirit. Aware of the equivocality of the word Spirit, especially in conjunction with Soul, Leibnitz warns us against the supposition of it as something *intelligent*; he uses the word as expressing the Form or Monad, which has by nature a kind of *striving*, or appetency, and *perception*; he distinguishes it from the superior souls, the intelligent and human, which must not be sought everywhere.† *Appetitus* is what we call *tendency*, *agendi conatus*. *Perceptio* is the *representative* faculty, *representatio variationis externæ in interna*, the expression of the many in the one.‡ But these powers only rise to intelligence and consciousness in Man. Nature is an unconscious Soul.

Evolving Matter from Force, he got rid of the old Dualism of Matter and Mind as two independent existences; and with it the insoluble difficulty of how Matter could act upon Mind; how two things separated by the whole diameter of being, could come into union yet remain distinct.

Malebranche § tried to solve it by the once famous hypo-

* 'Et tale principium appellamus substantiale, item vim primitivam, ἐντελέχειαν τὴν πρώτην, uno nomine *animam*, quod activum cum passivo conjunctum *substantiam completam* constituit.' *Opera*, p. 463.

† *De ipsa Natura*, § 12, *Opera*, p. 158.

‡ *Opera*, pp. 438, 464.

§ MALEBRANCHE: *Recherche de la Vérité*, lib. vi. ch. 3. Comp. DESCARTES, *Princip. phil.* ii. § 36.

thesis of 'occasional causes':—We see all things in God; and it is God who produces sensations in us coincident with the movements of bodies; or *vice versâ* produces movements in bodies coincident with our volitions.

Leibnitz also saw the difficulty, but objected to the explanation of 'occasional causes,' because it involved a perpetual miracle. Why a perpetual miracle should be rejected, he did not make clear; still less did he show wherein his favourite hypothesis of a Pre-established Harmony surpasses the philosophic value of Occasional Causes: the two only differ as a constant and a constantly-renewed action of the deity; what in the one conception is the fluent motion of God's agency, is in the other conception crystallised into preordained Plan.

Impressions on the body were supposed to create sensations in the mind; but how? Leibnitz* denied the fact; declared that sensations came *from* within, and were only in harmony with external objects; declared that body and mind were so adjusted that they were like two unconnected clocks, so constructed that the instant one strikes the hour, the other strikes it.† 'I cannot help coming to this notion,' he says, 'that God created the soul in such a manner at first that it should *represent* within itself all the simultaneous changes in the body; and that He has made the body also in such a manner as that it must of itself do what the soul wills: so that the laws which make the thoughts of the soul follow each other in regular succession *must* produce *images* which shall be coincident with the impressions made by external objects upon our organs of sense; while the laws by which the motions of the body follow each other are likewise so coincident with the thoughts of the soul as to give to our *volitions* and *actions* the very same appearance as if the latter were really the natural and the necessary consequence of the former.'

* *Théodicée*, i. 65.

† Dr. WILLIS in his *Life of Spinoza* (1870), p. 139, declares the passage in the text to be inexact, adding that Leibnitz speaks of one clock not two. If my critic will turn to *Opera*, pp. 130, 134, and 430, he may satisfy himself that Leibnitz very distinctly says: 'Figurez-vous deux horloges ou deux montres,' &c.

The Pre-established Harmony hypothesis has carried the name of Leibnitz far and wide (on the breath of Laughter mostly), and made him known to thousands who would never otherwise have heard of him. Kuno Fischer is, I believe, the first writer who has seen this hypothesis in its true light, namely, as a presentation of Leibnitz's metaphysical conception of the world in a popularly intelligible aspect. The two clocks figured the two aspects of the one existence, which Philosophy, no less than Common Opinion, held to be not one, but two disparate existences. Matter and Mind were conceived as two, even by Spinoza, though he regarded them only as Attributes of the one Substance. Leibnitz had to show how these opposites could unite; and taking his stand on the common ground, regarding them *as* opposites, he said their agreement or union could only be conceived as resulting from influx, assistance, or pre-established harmony. These three conceptions he illustrated by supposing two independent clocks which should perfectly accord: 1st. Because, as in the experiment of Huygens, the vibrations of the one influenced those of the other; 2nd. Because an attendant vigilantly rectified any deviation which might occur, and so kept the two in agreement. 3rd. Because the clocks were from the first so constructed that the action of each would exactly correspond with the action of the other. The first supposition was untenable, because for an *influxus physicus*, it would be necessary that the particles should pass from one to another. The second was untenable because it required a perpetual interference—a perpetual miracle. Only the third supposition therefore remained, namely, that ‘Dieu a fait dès le commencement chacune de ces deux substances de telle nature qu’en ne suivant que ses propres loix qu’elle a reçues avec son être, elle s’accorde pourtant avec l’autre, tout comme s’il y avoit une influence mutuelle, ou comme si Dieu y mettoit toujours la main au-delà de son concours général.’

The attentive reader will remark that the hypothesis of mutual influence by no means requires that the material

particles of the one should pass over to the other, as Leibnitz assumes; it only requires that the motions of the particles should be rhythmic and communicable. But Leibnitz had in his eye the old hypothesis of sensible species, images, eidola, detaching themselves from objects, and entering the mind. He denied that the atoms could penetrate each other; figuratively declaring that they had 'no windows through which an entrance could be made.' The limits of individuality were opposed to all physical influx. It should be observed that Leibnitz, who denied—and I think rightly denied—the generally accepted idea of the *communication* of Motion from without, may have denied the explanation of Huygens that the vibrations of one clock were communicated to the other, each clock having only its own motions. On this ground he would have opposed the influence of Motion as he opposed the influx of particles. 'Accidents cannot detach themselves and walk out of substances, as the scholastics formerly imagined.' But unless he had also denied that motions could be *compounded*, as atoms could be aggregated, he would have had no solid reason for the denial of mutual influence.

The reader will further observe another difficulty. If, as Leibnitz maintains, the monad is at once *both* soul and body, force and matter, there needs neither 'influence' nor 'plan' to account for their harmony. The movements of Matter are but the objective side of the movements of Mind. There is no harmony, for there are not two existences to harmonise. Here Kuno Fischer's suggestion that the 'Pre-established' hypothesis was only a pedagogic illustration, and that the relation between Soul and Body was by him treated as an anthropological not as a metaphysical question, finds its strongest support. Nevertheless we have still to reconcile the many passages in which the existence of *two* disconnected spheres, that of Mind and that of Body, harmonised in their movements, is expressly maintained: 'que cette correspondance sert à expliquer la communication des substances et l'union de l'âme avec le corps par les loix de la nature.' In

reply to Foucher's objection that the harmony renders Matter superfluous, he says: God has willed that there should be many substances, and 'il a trouvé bon que les modifications de l'âme répondissent à *quelque chose* de dehors.'* And he confesses that his illustration of the two disconnected clocks, was to prove the communication between '*deux substances aussi différentes que l'âme et le corps.*'† The harmony results because the movement of external things following their own special laws, coincides with the movement of the soul, which has equally its special laws. 'The first difficulty consists in this question, are the two substances which accord made for each other? I answer, yes, since if they accord, God has made them so.'‡

The discrepancy is reconciled if we adopt Fischer's suggestion, that in these, and all other passages, in which Leibnitz speaks of Matter and Mind as two Substances, or as two disconnected spheres, he is only accommodating himself to popular language. Although I do not remember any express indication of such a compliance, in this particular case, there are several places in which he says that in spite of Copernicus we still speak of the 'sun rising and setting;' and there can be no sort of doubt that he refused to regard either Matter or Mind as substances at all: their supposed opposition vanishes under the light of the Principle of Continuity, which dissolves all difference.

Every monad is at once body and soul, a besouled body, a living machine, a complex of active and passive Forces. The active Force is living, spontaneous, planning; the passive is moveable, mechanical, efficient. The relation of soul to body is the relation of an aim to its execution—of a plan to the movements which realise it. Leibnitz thus, as Fischer remarks, reproduces Aristotle, Plato, and Pythagoras: after Aristotle he makes the soul the final cause or Entelechy of the body; after Plato its Form or Idea; after Pythagoras its harmony. We must not therefore say there is harmony

* *Opera*, pp. 131, 132.

† *Ibid.* p. 133.

‡ *Ibid.* p. 458.

between soul and body, as if these were two, but the soul is the harmony of the body.*

We must now consider the fundamental conception which may be said to animate the whole of this philosophy, that of Final Cause. In our *Prolegomena*, § 50, and vol. I. p. 317, we have discussed this conception of Plan, which, instead of regarding a resultant as a resultant, regards it as a directing guide. The end which we see *achieved*, is detached from its historic moments and erected into a pre-existent *aim*. The idea we thus form of an event is supposed to have engendered the event. Referring the reader to this discussion, we will ask him on returning from it to consider the arguments by which Leibnitz upholds the Final Causes so energetically denounced by Bacon, Descartes, and Spinoza.

He does not, as less subtle advocates of this cause often do, fall into the absurdity of making the Plan something external, as it is in Art. The Final Cause is not independent of the means, but includes and engenders them. Art can only execute its Plan by bringing together foreign materials, Nature incarnates her Plan in the material. Thus the sculptor realises his idea of Hercules in marble, but it is a dead Hercules. Nature realises her idea in the living Hercules—the soul incorporates itself. The soul is thus the Plan of the body in a double sense, namely, as a condition and a perfection, as a possibility and an actuality. It first exists as a simple *disposition*—the possibility of being. This disposition includes,—and including engenders,—the individual. Every monad is an individual that evolves itself. The evolution is conformable to plan, because the efficient or mechanical causes are under the inspiration and guidance of spiritual spontaneous activity. The body acts as corporeal, that is, as mechanical, but its motive is teleological.

Thus efficient causes are related to final causes, as Machinery to Life, as passive to active forces. Soul and body are not two different essences, but the two primitive

* KUNO FISCHER: *Geschichte der neuen Philosophie*, 1867, ii. 391.

forces constituting every monad. And just as the soul and body form an Individual, so the spiritual and corporeal worlds are not different worlds but an Universe or Cosmos.*

It is on these grounds that Leibnitz places the conception of Plan in the supreme position, using it 'not only as of advantage to Morality and Religion, but also as an organon of physical discovery.'†

Thus armed, Leibnitz maintains the embryological doctrine (which Aristotle had satisfactorily refuted‡) of Preformation, or Pre-existence; a doctrine which sets forth that the oak is contained in the acorn, the man in the ovum, 'et que sa génération apparente n'est que développement, et une espèce d'augmentation.' 'Les expériences de notre temps nous portent à croire que les âmes et même les animaux ont toujours existé, quoiqu'en petit volume.' § It is unnecessary now-a-days to refute this hypothesis; our interest in it is its necessary position in his scheme, and the sort of countenance it gave to his conception of Plan as the *supreme condition*: for this is the true description of Plan; efficient causes are the material conditions of an effect, but over and above these there is the supreme (spiritual) condition, which is Plan.

Two points deserve notice here: 1st, that Leibnitz has succeeded where Hegel failed, namely, in finding a First Principle which contained within itself the necessity of development; 2nd, that the resolution of this Principle into an Idea was also effected without breach of continuity, so that Idealism may be said to have its metaphysical germ in the definition of Force.

I. *Development*.—The monad is a self-developing force; were it merely passive, it would have material extension, but

* KUNO FISCHER, here (p. 399), notices and refutes the idea that the Pre-established Harmony is borrowed from SPINOZA; he shows the radical opposition of the two thinkers.

† 'Non tantum prodesse ad virtutem et pietatem in Ethica et Theologia naturali sed etiam in ipsa Physica ad inveniendum et detegendum abditas veritates.' *Opera*, p. 155.

‡ Conf. my *Aristotle: a chapter from the history of Science*, pp. 352-9.

§ *Opera*, 125, 179; conf. *De Anima Brutorum*, § xi.

no change; being, however, active, no less than passive, it has within it the principle of change.* Moreover, the activity is implied in the passivity, as an inseparable correlate: 'tout ce qui pâtit doit agir réciproquement, et tout ce qui agit doit pâtre quelque réaction.'† The activity is internal, since no external cause can influence or penetrate it.‡ All these changes, issuing from within, form a series which was *virtually* pre-existent, and might have been foreseen by superior intelligence.§ For we must not suppose that the individual is the *sum* of these changes, their product, it is rather their metaphysical *unity*, or subject. Herein we have the explanation of that obscure passage respecting specification which runs thus: 'Mais il faut aussi qu'outre le principe du changement [active force] il y ait un *détail de ce qui change*, qui fasse pour ainsi dire la spécification et la variété des substances simples.'|| What is this 'détail de ce qui change?' It is, as Kuno Fischer says, the subject of change, the special peculiarity of the monad. 'Ce détail,' adds Leibnitz, 'doit envelopper une multitude dans l'unité, car tout changement naturel se faisant par degrés, *quelque chose change et quelque chose reste*, et par conséquent il faut que dans la substance simple il y ait une pluralité d'affections et de rapports, quoiqu'il n'y en ait point de parties.'

II. *The Idea.* The passage just cited, which has puzzled many students, will explain for us that resolution of the

* 'Differt enim vis activa a potentia nuda vulgo scholis cognita, quod potentia activa scholasticorum, seu facultas, nihil aliud est quam propinqua agendi possibilitas, quæ tamen aliena excitatione, et velut stimulo indiget, ut in actum transferatur. Sed vis activa actum quandam sive *ἐντελέχειαν* continet, atque inter facultatem agendi actionemque ipsam media est et conatum involvit; atque ita per se ipsam in operationem fertur; nec auxiliis indiget, sed sola sublatione impedimenti.' *De primæ philosophiæ emendatione. Opera*, p. 122.

† *Sur l'essence du corps. Opera*, p. 113.

‡ *Monadologie*, § 11.

§ 'Que chacune de ces substances contient dans sa nature *legem continuationis seriei suarum operationum*, et tout ce qui lui est arrivé et arrivera.' *Lettre à Arnauld: Op.* 107. 'Et comme tout présent état d'une substance simple est naturellement une suite de son état précédent, tellement que le présent est gros de l'avenir.' *Monadologie*, § 22: *Op.* 706.

|| *Monadologie*, § 12.

monad itself into an Idea which has also been regarded as unintelligible. First note that the active Subject—the *détail de ce qui change*—comprises multiplicity in unity. Next note that Perception is defined the ‘expression of multiplicity in unity.’ Then add that the multiple changes which exist preformed in the monad, exist ideally, not materially, and that the soul has a *prevision* of the future rather than actual *comprehension* of it. Crown all by the definition of the *vis representativa*, as the power of making present, and you have the whole scheme before you: the *entelechie* or active force is a representative force—‘habet variationem internam secundum quam etiam variantur actiones externæ; sed perceptio nihil aliud est quam illa ipsa repræsentatio variationis externæ in interna.’* The representative nature is elsewhere declared to be the power possessed by the monad of expressing the relations of external objects to it, which power was bestowed on it at its creation, and constitutes its individuality; each represents exactly the whole universe from its own point of view; and the perceptions or expressions of external objects arising in the soul in virtue of her own laws, as if in a world apart.†

Thus the existence of Motion implies an antecedent Active Force. This, in turn, implies an Aim or Plan, since the action must have a direction. Plan, in turn, implies Intelligence. Thus the primitive conception of Force is resolved into Representation—and Things are representative representations.

In this ‘evolution of the Idea’ we must, however, distinguish the grades, and not confound the unconscious perception of inferior monads with the conscious perception of higher monads; animals, plants, and minerals are all incessantly guided by the immanent Plan, the active final cause; they all represent the objects in relation to them; but they are not conscious of their aim, they do not *know* the representations. Man alone (unless there be higher beings, which

* *De Anima Brutorum*, § viii. *Opera*, 464.

† *Système nouveau*, § 14. *Opera*, p. 127.

Leibnitz thinks a necessary deduction from the Law of Continuity) has true knowledge. This assumption of a special endowment for Man, while it gets rid of the objectionable anthropomorphism which seemed to identify cosmical phenomena with human phenomena, and made the mineral *intelligent*, though intelligent at a lower power, is open to the twofold objection that it is a breach in the Law of Continuity, and that it is opposed to the very Law of Analogy which Leibnitz invokes as its basis. If man has a representative power which is analogous to that of animals, plants, and minerals, his intellect may be higher than theirs, but must be of the same nature, differing solely in degree. And this is the opinion held by Leibnitz when treating of the Cosmos. He forsakes it when treating specially of Psychology, and notably in his polemic against Locke.*

Unless we identify the Active Force in Things with Representations, we cannot adopt his ideal hypothesis; and if we identify them, we must pursue the analogy, and declare that minerals as well as men have not only perceptions and desires, but conceptions, ratiocinations, terrors, pains, and pleasures. The latter conclusion is absurd, and is repudiated in advance by him; but his important distinction of Perception and Apperception—Unconscious and Conscious states will not save the fundamental position. For of two things, one: either the Law of Continuity is absolute, and there can only be variations of degree; or the Law is relative, and variations of degree, at certain stages, suddenly start into variations of kind. The first supposition anthropomorphizes the Cosmos. The second supposition admits the special character of Humanity, the exclusive nature of the human soul, but withdraws from the Cosmos that immanent Intelligence which it was the purpose of Leibnitz to prove.

* 'On pourroit se servir d'un mot plus général que celui de *pensée*, savoir de celui de *perception*, en n'attribuant la pensée qu'aux esprits, au lieu que la perception appartient à toutes les Entéléchies. Mais je ne veux pourtant contester à personne la liberté de prendre le terme de pensée dans la même généralité.'—*Nouveaux Essais: Opera*, p. 268.

Here as throughout he is misguided by the principle of *virtual* existence.

The fact is Leibnitz was placed in the unpleasant dilemma of assimilating Man to animals, and through these to plants, and through these again to minerals, or else of relinquishing his fundamental positions. He endeavoured to escape by assigning *sensible* representation to animals, denying them *thought*. Their perceptive power enables them to feel, but not to know; their representations remain impressions, do not become objects. Their judgments are memories, never notions; memories combining sensible experiences, not *causal* intuitions. The dog remembers the pain inflicted by the stick; he does not dread the stick because he knows from causality that it *must* pain him if it strike him; he dreads it because it *has* pained him.* Man alone has the power of ratiocination. The *à priori* principles by which his reason is guided are innate. They form the primitive nature of Mind. The origin of knowledge therefore must not be sought in Experience, but in these preformed, pre-existent Ideas which constitute the Mind—not, indeed, according to the vulgar hypothesis which Locke opposed, pre-existent as *actual*, but as *virtual—potential*—called into actuality through Experience. They form the *unconscious* groundwork of the Mind; and Locke confounds *innate* with *known*, when he argues against them. In so arguing Locke suppresses the important distinction between potential and actual, and implies that Force does not exist where it is not manifested.

All thus turns upon the Aristotelian distinction of virtual and actual. But even this will not give us the necessary deduction of Mind as a special endowment of Man. The distinction between Man and Animal is asserted, not deduced. Leibnitz consents to class souls apart, as monads that have memory added to perception and appetency; and on similar grounds he classes minds apart, as monads that add to memory ‘the knowledge of necessary and eternal truths.’†

* *De Anima Brutorum. Monadologie. Principes de la Nature et de la Grâce.*

† *Monadologie*, § 29. *Principes de la Nature*, § 5.

But this addition he assumes. It is a consequence of a kind of 'election,' through which the animal soul is raised to the prerogative of rational souls. The animal soul mirrors the universe and its creatures, but the rational soul mirrors Divinity itself, the author of nature, and is 'not only capable of knowing the universe, but in some sort of creating one for itself, each mind being a small deity in its own department.'* If we accept his assertion that in animals and plants the perceptions are unconscious, whereas in man they are conscious—perception being 'the internal state of the monad, representing external things,' and conscience, or apperception, being 'the reflective knowledge of that internal state,'† we may thereby save the Law of Continuity from any breach. But obviously this assertion is wholly destitute of proof; and if the Law of Analogy obliges us to regard the activity of animals, plants, and minerals as perceptions, and intelligently guided, we require some stringent proof before admitting that the activity of Man, or any special group of his activities, has the supreme prerogative of judgment by Causality, the supreme prerogative of Innate Ideas. The *central monad*, which in Man is Mind, and in the Animal or Plant is only Soul, must differ only in degree, not in kind, if the Law of Continuity holds good. Leibnitz indeed says that 'there is an infinity of degrees among monads, some of them more or less dominant over the others.'‡ And if God is the *monas monadum*, so in a smaller sphere may the Mind be a *monas monadum*.

Modern Biology presents us with an illustration of the Monadology, in its conception of the Organism as constituted by an infinite number of cells, each cell having an independent life of its own,—origin, development, and death. The compound result of all these separate lives is the Life of the Organism. There is a school of biologists which holds that the Life of the Organism is not the sum of these cells, but that over and above these cells and their lives, there is a

* *Monadologie*, § 82.† *Principes de la Nature*, § 4.‡ *Loc. cit.*

Vital Principle which guides their forces in accordance with its nature. For this Vital Principle a Leibnitzian might substitute a Central Cell, primitively distinguished from all subordinate cells by forces of a higher reach, yet in all other essential respects analogous to the subordinate cells.

I must not dwell longer on these metaphysical hypotheses; and I have dwelt so long on them, mainly as a preparation for the understanding of German Philosophy, which they in a great measure inspired. As a help to the student the following remark may be added. The whole speculations of Leibnitz may be regarded as *illustrations of the conception of Plan (Final Cause) evolving itself through the Law of Continuity, by means of an immanent Polarity*. The polarities, or necessary correlates, are Active and Passive, Aim and Means, Force and Extension, Spontaneity and Causality, Living Mechanism and Causal Mechanism, Form and Matter, Soul and Body, Ideal and Actual, Conscious and Unconscious. In this list the first of each couple corresponds with all the other firsts, and the second with all the other seconds.

Quitting this region of Metaphysics we must now pass to that of Psychology, at least in relation to the criticism of Locke which forms one of his three capital works. The *Nouveaux Essais* were not published till many years after his death, and are not included in the edition by M. Dutens. The work was unknown to Dugald Stewart; and this fact will explain a passage in his *Dissertation*, where he says that Leibnitz always speaks coldly of Locke's *Essay*. This is inexact. In the brief *Réflexions sur l'Essai*,* he speaks with evident admiration, and marks his dissent firmly yet without acrimony or superciliousness; admitting that Locke had good reason for opposing the prejudices current respecting innate ideas. And in the *Nouveaux Essais* he treats his great adversary with due respect, in the preface speaking of him with eulogy. 'The *Essay concerning Human Understanding*, written by an

* *Opera*, p. 136.

illustrious Englishman, being one of the finest and most esteemed works of our time, I have resolved to make some comments on it. . . . Thus I shall procure a favourable introduction for my thoughts by placing them in such good company. . . . It is true that I am often of a different opinion; but so far from detracting on that account from the merit of this celebrated writer, I do him justice in making known in what and wherefore I differ from him, when I judge it necessary to prevent his authority from prevailing over reason on some important points. In fact, although the author of the *Essay* says a thousand things which I must applaud, yet our systems greatly differ. His has greater affinity to that of Aristotle,—mine, to that of Plato.’ This is the spirit in which the Homeric heroes regard their adversaries; an interchange of admiration for each other’s prowess does not deaden one of their blows, but it makes the combat more dignified.

Leibnitz, as we said, was an avowed upholder of Scholasticism, but under an improved form. ‘In my opinion true philosophy consists in combining Plato with Aristotle and Democritus.’* He was deeply read in Suarez, the last of the Scholastics; borrowed largely from Giordano Bruno; was influenced greatly by Descartes and Spinoza, though always at war with them; and did his utmost to combine Greek Philosophy with Christian Philosophy.

To a mind thus furnished, the doctrines of Locke must needs have been unwelcome; indeed they could not be expected to gain admission. Moreover, as F. Schlegel observed, every man is born either a Platonist or an Aristotelian.† Leibnitz and Locke were examples of this antagonism: ‘Our differences,’ says Leibnitz, ‘are important. The question between us is whether the soul in itself is entirely empty, like tablets upon which nothing has been written (*tabula rasa*), according to Aristotle and the author of the *Essay*;

* *Opera*, p. 446.

† COLERIDGE used to pass off this aphorism as his own. It is to be found, however, in SCHLEGEL: *Geschichte der Literatur*.

and whether all that is there traced comes wholly from the senses and experience ; or whether the soul originally contains the principles of several notions and doctrines, which the external objects only awaken on occasions, as I believe with Plato.'

The nature of the problem is well stated here ; and Leibnitz sides with Plato in his solution of it. The main arguments by which he supports his view are those so often since repeated of the Universality and Necessity of certain truths, and of the incapacity of Experience to furnish us with anything beyond a knowledge of individual cases. ' For if any event can be foreseen before it has been tried, it is manifest that *we* contribute something for our own parts.' *Ergo*, mere experience, it is argued, does *not* constitute all our knowledge. ' The senses, although *necessary* for all actual knowledge, are not sufficient to *give* us all of it ; since the senses never can give anything but examples, that is to say, particular or individual truths. But all the examples which confirm a general truth, however numerous, do not suffice to establish the universal necessity of that truth ; for it does not follow that that which has once occurred will always occur in the same way.'

Leibnitz continues : ' Whence it appears that necessary truths, such as we find in mathematics, and particularly in arithmetic and geometry, must have principles of which the proof does not depend upon examples, nor consequently upon the senses, although without the senses one would never have thought of them. So also logic, metaphysics, and morals are full of such truths, and consequently their proofs can only come from those internal principles which are called *innate*.'

Locke would perfectly have agreed with these premisses, but the conclusion he would have rejected. That the senses alone could not furnish us with any general truth, he taught as expressly as Leibnitz did ; but this in no way affects his system, for he did not build his system upon the senses alone.

Leibnitz, however, seems to have been misled by Locke's

language in the first definition of Reflection; for he says, ‘Perhaps the opinions of our able author are not so far from mine as they appear to be. For, after having employed the whole of his first book against innate knowledge taken in a certain sense, he acknowledges in the beginning of the second that there are ideas which do not originate from the senses, but arise from Reflection. Now reflection is nothing but attention to that which passes within us; and *the senses do not convey to us what we already possess within ourselves.* Can it then be denied that there is much innate in the mind?’

The passage in italics is a curious instance of how the mind, preoccupied with its own opinions, sees them reflected in the expressions of others. Leibnitz here assumes the very point at issue; assumes that the mind has innate ideas which the senses cannot convey to it; and this assumption he supposes to be contained in Locke’s words. Locke taught precisely the contrary. ‘The mind is itself innate,’ continues Leibnitz—(to which we reiterate our objection: innate in *what*? In itself? or in us? To say that it is innate in itself is a quibble; that it is innate in *us*, is a displacement of the question: no one in those days doubted that the mind of man was born in man—born with man; the question was, Are there any ideas born *with* the mind, or are all ideas acquired *by* the mind?) ‘The mind is itself innate, and there are included in it substance, duration, change, action, perception, pleasure, and a thousand other objects of our intellectual ideas. . . . I have used the comparison of a block of marble which has certain veins in it, rather than a plain piece of marble such as the philosophers call *tabula rasa*; because, if the soul resembled tablets unwritten on, truths would be in us like the figure of Hercules is in the block of marble, when that marble may receive indifferently one figure or another. But if there are veins in the marble which mark the figure of Hercules rather than any other figure, that marble would be more determinate, and the figure of Hercules would in some way be innate, although

labour would be necessary to discover the veins, and to free them from their envelopment of marble. Thus are ideas and truths innate in us.'

This is an ingenious statement of the theory: unfortunately for it, the very existence of these veins in the marble is an assumption, and an assumption not made for the facilitating of inquiry, but simply for the proof of the theory assumed: it is an hypothesis framed for the sake of explaining—what?—the hypothesis itself! Ideas are first assumed to be innate; to prove this assumption, another assumption—the existence of innate ideas—is made; and the theory is complete.

The real force of Leibnitz's theory lies in his distinction between contingent and necessary truths, and in his position that Experience alone could never furnish us with necessary truths: a position we shall have to examine closely when we come to Kant, who gave it its most authoritative form. The weakness of the theory, as propounded by Leibnitz, is that it makes no consistent distinction between empirical and *a priori* knowledge. Locke had shaken, if he had not shattered, the old assumption of Innate Ideas, by showing that the ideas were deducible from Experience. Leibnitz attempted to meet this by assuming that all knowledge was in truth innate, and that what Locke supposed to be *given in* Experience was simply *evolved by* Experience.* Herein the distinction between necessary and contingent disappears; if all knowledge is innate, all is developed, all stands on equal footing of certainty. Kant perceived the contradiction; but no one before Kant saw how it could be rectified.

One passage will suffice to exhibit the contrast between Locke and Leibnitz (*Philalèthe* stands for Locke):—

'*Philalèthe*.—L'entendement ne ressemble pas mal à un cabinet entièrement obscur, qui n'aurait que quelques petites

* 'Lorsque vous direz que les idées nous viennent de l'une ou l'autre de ces causes (observation and reflection), je l'entends de leur perception actuelle, car je crois d'avoir montré qu'elles sont en nous avant qu'on s'en aperçoive.'—*Nouveaux Essais*, liv. ii. ch. i. Comp. liv. i.

ouvertures pour laisser entrer par dehors les images extérieures et visibles, de sorte que si ces images, venant à se peindre dans ce cabinet obscur, pouvaient y rester et y être placées en ordre, en sorte qu'on pouvait les retrouver dans l'occasion, il y aurait une grande ressemblance entre ce cabinet et l'entendement humain.

'*Théophile*.—Pour rendre la ressemblance plus grande, il faudrait supposer que dans la chambre obscure il y eût une toile pour recevoir les espèces, qui ne fût pas unie, mais diversifiée par des plis représentant les connaissances innées ; que de plus cette toile étant tendue eût une manière de ressort ou force d'agir, et même une action ou réaction accommodée tant aux plis passés qu'aux nouveaux venus des impressions des espèces.' *

A dispassionate review of the controversy, as conducted by the Sensationalists on the one hand, and the Animists on the other, discloses the incompleteness of both. Locke had but a vague and vacillating conception of the nature of the Understanding upon which the Senses traced images ; or of the processes by which sensation and ideation were effected. He was forced to admit innate faculties, but had no precise conception of what they were, nor of how they operated. Leibnitz properly objected that these naked faculties, 'les facultés sans quelque acte, en un mot, les pures puissances de l'école, ne sont que des fictions que la nature ne connaît point et qu'on obtient en faisant des abstractions.'

But Leibnitz himself, though vindicating the necessary co-operation of the Mind (the co-operation of subject with object, in Kant's phrase), had no precise conception, and was reduced to mere assumption. Because we are born with certain dispositions, and because Thought has certain recognisable conditions, he assumed that we are born with all dispositions, and that all knowledge is simply the awakening of slumbering ideas.

As a corrective to what was precipitate in Locke's psycho-

* *Nouveaux Essais*, liv. ii. ch. xii.

logy, as an energetic protest against what may be called sensuous experience (which disregards the 'organised experience' of the race, and thereby isolates the individual from Humanity), the criticism of Leibnitz was of signal service. In itself it was not of value. The false method on which he proceeded rendered psychological discovery hopeless.* Nevertheless, there are certain incidental passages displaying extraordinary acuteness; and there is one contribution to Psychology which I consider of immense value, namely, the distinction between perception and apperception, or, as I have named them, Sense-Consciousness and Thought-Consciousness.† A thorough discussion of this subject ought to find a place in the prolegomena to every system of Psychology.

The problems relating to the origin and scope of Knowledge henceforth occupy the most prominent position in speculation. The solutions offered by Locke were widely accepted. In England and in France, they may be said to have constituted the principia of all theorising. But, as was noted in a previous chapter, they contained within them seeds of Idealism and Scepticism; and these we are now to contemplate in their developed forms.

* 'Son principe de la raison suffisante, très-beau et très-vrai en lui-même,' says D'ALEMBERT with pleasantry, 'ne paraît pas devoir être fort utile à des êtres aussi peu éclairés que nous le sommes sur les raisons premières de toutes choses.' — *Discours préliminaire de l'Encyclopédie*.

† *Nouveaux Essais*, liv. ii. ch. i. §§ 14–19. Compare *Physiology of Common Life*, ii. 74.

ERDMANN's edition of the Philosophical Works (Berlin, 1840) is the best and completest up to this date. There is a handy edition of the chief writings in the *Œuvres de Leibnitz*, par M. A. JACQUES, in 2 vols., Paris, 1842. A good exposition will be found in BUHLER: *Gesch. der neuern Philos.* iv. 129–238. BAUMANN: *Die Lehren von Raum, Zeit und Mathematik in der neuern Philosophie*, 1870, ii. pp. 1–347. HARMS: *Einleitung in die Physik* (Karsten's *Allgemeine Encyclopädie der Physik*) 1869, pp. 129, 237–43. CASPARI: *Leibnitz' Philosophie beleuchtet vom Gesichtspunkt der Grundbegriffe von Kraft und Stoff*, 1870. But far surpassing all other works, both in exhaustiveness and acuteness, is the volume devoted to Leibnitz by KUNO FISCHER, *Gesch. d. neuern Philos.* 1867, Bd. ii.

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